# The Iron Age

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A Review of the Hardware, Iron and Metal Trades.

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## Large Otto Gas Engines of Prague, Austria.

Though the days of gas power on large ocean steamers—which Sir William Siemens predicted some years ago in his inaugural address before the Royal Society, London—have not come yet, progress in the development of gas engines of large power has of late been remarkable, especially in those countries where gas is cheap, as in England and Germany. We hear of water-works being operated by Otto gas engines in cities of the importance and size of Coblentz and Koenigsberg, and in towns of smaller size, such as Duren and Quedlinburg, in Germany, and Wallingford and Stratford-on-Avon, in England. While some of these works have a total capacity of 200 horse-power, the size of the engines do not exceed as yet 75 indicated horse power, several engines being generally used with each plant. The Otto engine, which has steadily gained in favor in this country, at first modestly claimed economy only for small engines; but with decreasing prices for gas, engines of 25 horse-power are now no rarity. But no engines as large as those mentioned above have yet been built on this side of the Atlantic. Beyond 25 horse-power the starting of gas engines by hand is difficult, and substitutes for muscular power are then resorted to, sometimes in the shape of reservoirs wherein a part of the pressure the engine produces at each stroke is stored up. By lifting a valve this pressure is allowed to escape into the cylinder and so start the motion. Another very simple plan is to use a smaller engine to start the fly-wheels by pulleys and gearing. This means is adopted in the electric light station at Prague, Austria, of which we give illustrations on this page, and also on page 16, a 1 horse-power engine being used for the purpose. The station includes three engines of 50 actual horse-power each of the twin type, and four dynamos to supply about 250 arc-lights.. The engravings which we present require no explanation, but show very clearly the character of the whole arrangement. The scale is ⅛ inch to the foot. For the particulars we are indebted to Messrs. Schleicher, Schumm & Co., of the Otto Gas Engine Works, Philadelphia, Pa.

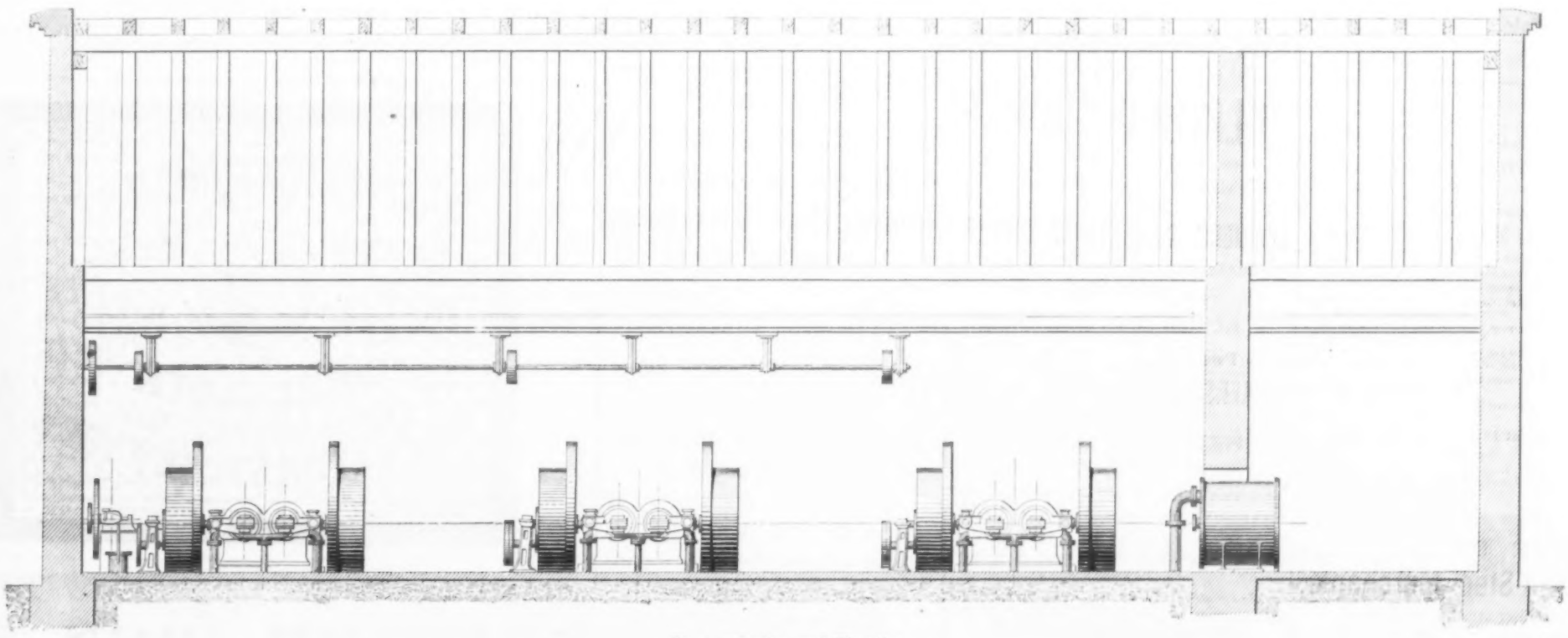

*Fig. 1.—Section and Elevation.*

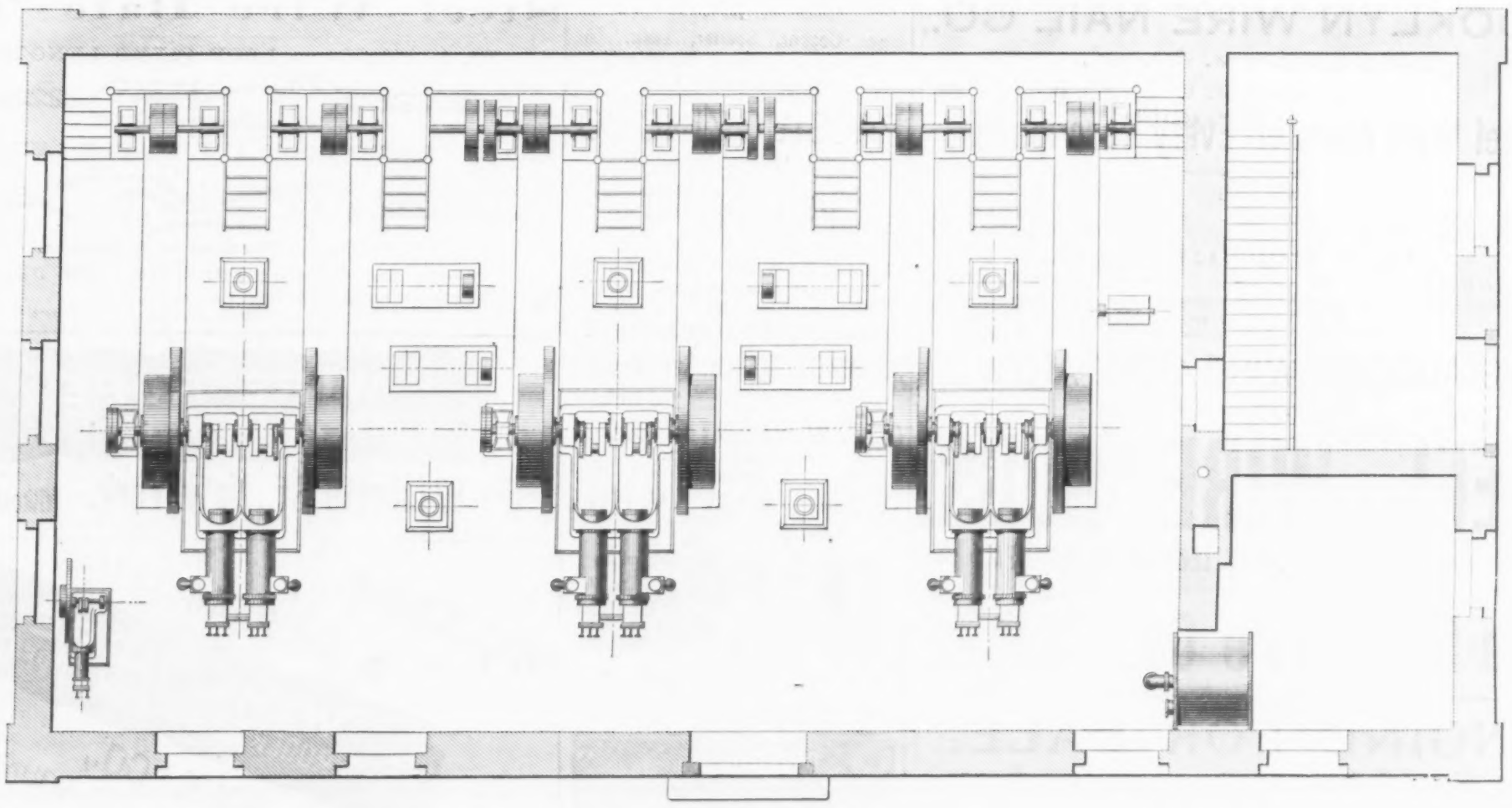

*Fig. 2.—Plan.*

(For Side Elevation and Section, see Page 16.)

LARGE OTTO GAS ENGINES FOR THE ELECTRIC LIGHT PLANT AT PRAGUE, AUSTRIA.

## Sir Henry Bessemer on Steel-Fort Construction.

Writing to the *Times* in reference to a letter, in which Lord Carnarvon expressed his concern at the delay in proceeding with the defense of our naval and coaling stations, Sir Henry Bessemer says:

It is not my intention to discuss the particular form of fort, turret or fortification to be employed for the protection of our coaling stations, simply because there are hundreds of men far more capable than myself of giving an accurate opinion on their respective merits. But I shall simply confine myself to a brief outline of the mode by which turrets, forts or fortified bastions may be erected in an almost incredibly short space of time, and at a cost that at first sight would appear quite fabulous, and in order that this fact may be more readily understood by persons not connected with the steel manufacture, I may be pardoned for mentioning the now well-known fact that 30 years ago—that is, before the introduction of my process, a bar of cast steel of the weight of an ordinary railway bar had never been sold in this country for so low a price as £40 per ton, whereas we are now making in England alone over 1,000,000 tons per annum of such steel bars, at prices varying from £3. 10/ to £4 per ton, and in order to fully appreciate the change which the trade has undergone it must be remembered that prior to the introduction of Bessemer steel all cast steel was melted in separate crucibles, containing only 40 to 60 pounds each, and requiring five hours for its fusion, whereas at present over 5,000,000 tons of Bessemer steel are made annually in vessels containing from 5 to 12 tons each, the process of conversion into steel occupying only 20 minutes. It is necessary to fully grasp these facts in order to understand how the formation of a turret or fort in one piece of steel becomes possible under the altered state of the steel manufacture. It should, however, be borne in mind that the long and tedious mechanical processes and the immensely expensive machinery for the production of armor plates as at present manufactured render such plates very costly, while the planing of their edges to shape, and the fitting and bolting of such separate plates on to some shield or other massive superstructure necessarily entail a vast expenditure of money and a great length of time both to manufacture and to erect any armor-plated defensive works. Now I propose to entirely avoid this great expenditure of time and money, so unavoidable in the production of ordinary armor-plates, by simply casting *in situ* the whole face of a fort or complete turret in one solid piece of steel, with all its ports and loopholes properly shaped and formed in the simple act of casting. Let us take as a simple example the production of a fort with a curved face of 100 feet in length, 16 feet high and 3 feet in thickness, such a plate would be molded after the manner practiced in ordinary iron foundries—that is, with brick walls held to-

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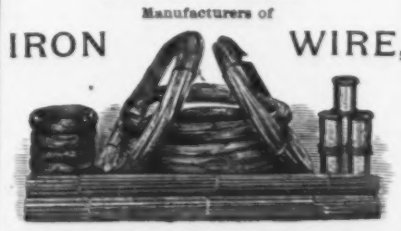
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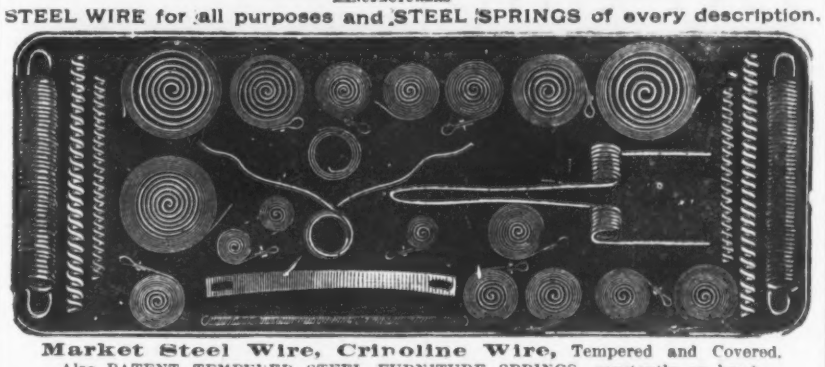

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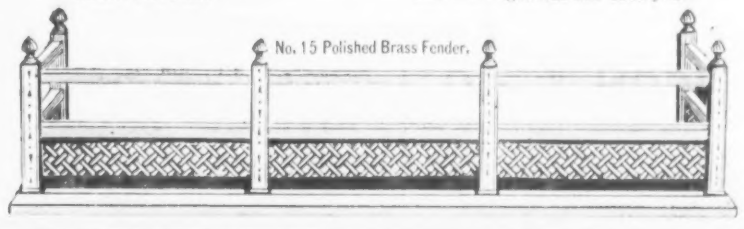


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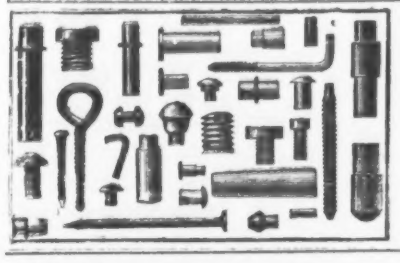

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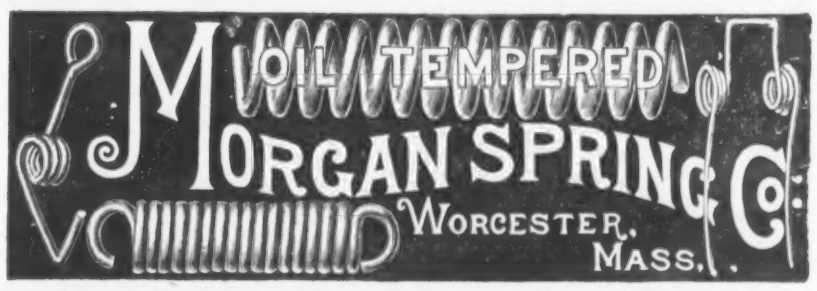


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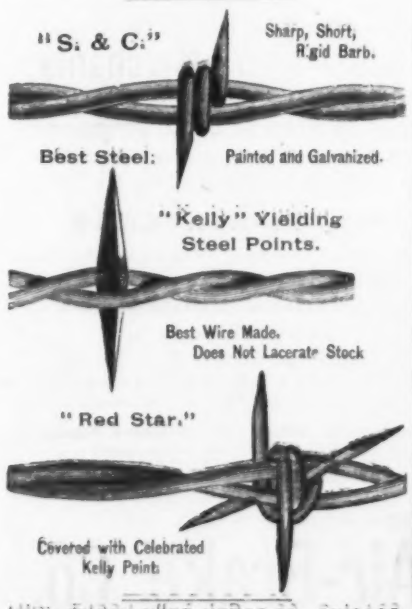


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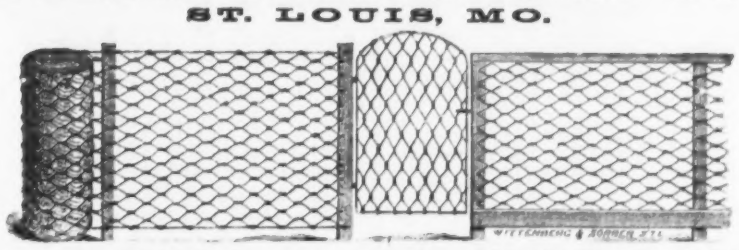

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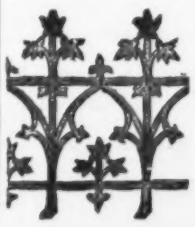

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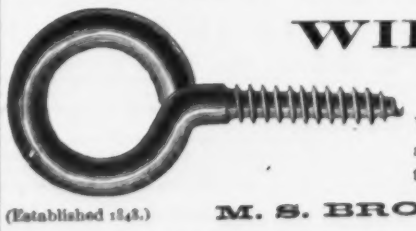

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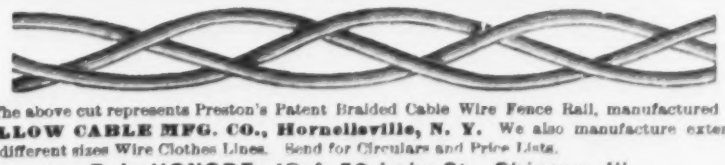

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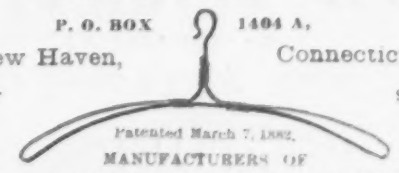


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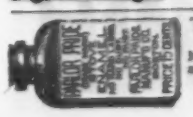

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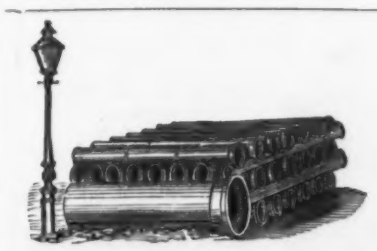

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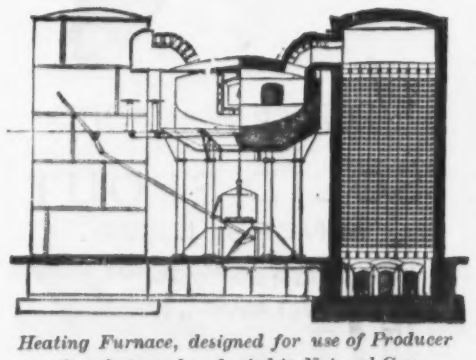

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gether with iron binders and internally lined with fire-clay. Alongside this mold would be placed the melting cupolas and four fixed 20-ton Bessemer converters, each capable of turning out 18 charges per day of 24 hours, thus delivering into the mold 1 ton of molten steel per minute. At this rate of working the mold would be filled in 16 hours, and produce a single plate weighing 960 tons, requiring no backing or superstructure for its support, and no expensive fitting together of separate parts, and having all its ports and loopholes formed in the required position by the act of casting.

It will be observed that the static pressure in the mold tending to burst it open would, in this system of slowly filling the mold, be extremely small, owing to the fact that the metal will solidify at the lower part, leaving only ½ foot or so of fluid at the upper part. It will be equally obvious that it would be quite impossible to destroy such masses of steel as could be produced by this method by any existing artillery, while the price which such castings would cost at a time when we can purchase finished steel rails for £3. 15/ per ton will be readily understood. Some 20 years ago, when I first proposed this plan of casting steel forts *in situ*, I went fully into the details of construction of the necessary portable apparatus to be employed for such a purpose, and although I have long since ceased to have any pecuniary interest whatever in the steel manufacture, I should be most happy to afford the Government any further information on the subject should they desire it.

## Latest Legal Decisions.

ASSIGNMENT FOR BENEFIT OF CREDITORS.

A steamboat company was insolvent and without the necessary money to carry on its business in the approaching spring, and its directors made a general assignment, though they were instructed that the great majority of the stockholders were opposed to it. The stockholders then brought suit to set aside the assignment, on the ground that the directors were not empowered to make it, unless with the consent of the stockholders. In this case—Hutchinson *vs.* Green—the bill was dismissed, and the plaintiffs appealed to the Supreme Court of Missouri, where the judgment was affirmed. Judge Black, in the opinion, said: A corporation may, like an individual, make an assignment under the statute of this State; and when the powers of a corporation is vested in a board of directors, they may, unless restricted, do whatever the corporation might do. It is the duty of the directors to care for the creditors, and when the corporation becomes crippled, and unable to meet its obligations in the usual course of its business, it is competent for the directors to make an assignment, and this they may do without the consent of the stockholders. The directors may, with propriety, consult with the stockholders, but if the corporation is insolvent, in the exercise of their best judgment they may make the assignment even against the expressed will of the stockholders."

RAILROAD NEGLIGENCE.

P., one of the prominent judges of the State, was returning home on a railway train, and on the cars was a number of non-union men who were working in loading iron ore on the docks. At one point on the road a body of strikers, whose places these non-union men were filling, made an attack on the train, because it was carrying the non-union men, and P. was injured therein. He sued the company for damages, on the ground of negligence: First, because it had invited the attack in taking on the train the men who were obnoxious to the strikers, and, second, because it had not provided police protection against a probable attack by this mob of nearly 200 men. The trial court agreed with the plaintiff's view, and he had a verdict and judgment, and the company assigned error to the Supreme Court of Illinois, where the case—Chicago and A. Railway Company *vs.* Pillsbury—was decided against the plaintiff. Judge Magruder, in the opinion, said: "1. A common carrier may refuse to carry persons who are of known or notoriously bad or even justly suspicious character, or persons offensively gross and immoral in their conduct, habits or behavior, or such as refuse to pay fare, or to conform to the reasonable rules and regulations of the company, but all other persons they must carry. The non-union workmen were earning their living in an honest way, by legitimate labor in a lawful occupation. To hold that because they were so doing a common carrier was authorized to refuse to give them passage over its road would be to maintain a monstrous doctrine indeed. We are not prepared to hold that a common carrier will be justified in refusing to receive a person as a passenger in its conveyances simply because that person's exercise of his lawful rights has become offensive to his unreasoning neighbors, and provokes from such neighbors unreasonable demonstrations of hostility against his person. Suppose the plaintiff in this action, a judge in our courts, had ordered a decision which made him most obnoxious to a class of persons so that they were highly incensed against him and it was expected they would assail him wherever he appeared, could a railway company justify itself in refusing to admit him to its cars as a passenger? We see no difference in such a case and that now before this court. The law is no respecter of persons. Its glory is that it extends its protecting hand as well to the lowly workman as to the learned judge. 2. As to the presence of the police, the duty of protecting the citizens of the State against so large a body of rioters as there was here rests upon the civil authorities and not upon the railroad corporations. To impose such a duty upon the companies would be to clothe them with a part of the functions of the Government itself."

CONTRACT BY LETTERS

C wrote to K to inquire the price of certain property, and K, in reply, wrote: "I will sell for $10,000; $5000 cash and $5000 in your note at 10 per cent. interest. If that is satisfactory, send the deed, and I will send it to you properly acknowledged." C told the agent of K that he would take the land, and the latter requested him to write to

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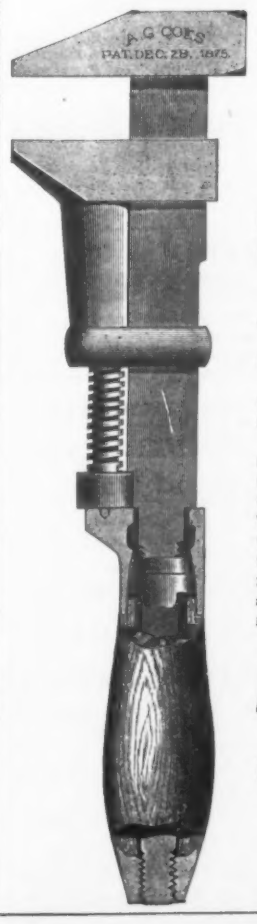


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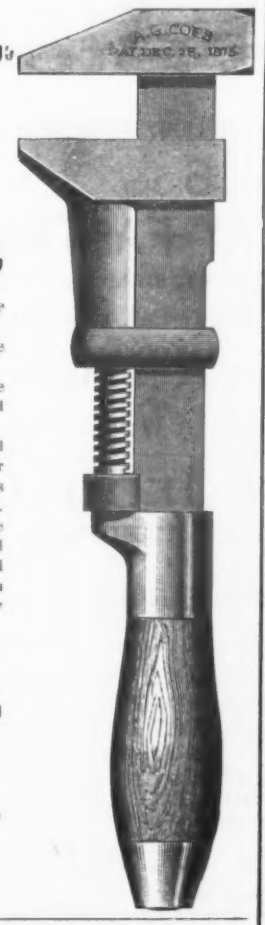


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This Wrench not only combines the superior qualities of a Gas Pipe Wrench but also all the requisite combinations of a regular Nut Wrench, thus making a combination which has no equal.

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The serrated jaws of the Wrench are interchangeable; that is, the same serrated plate may be used for either the stationary or sliding jaw, so that if one plate is broken another can be furnished adapted to either jaw without express designation. The slides, nuts and various parts are also interchangeable, thus easily repairing the Wrench at very small expense, and with as perfect practicability for further use as when the Wrench was new.

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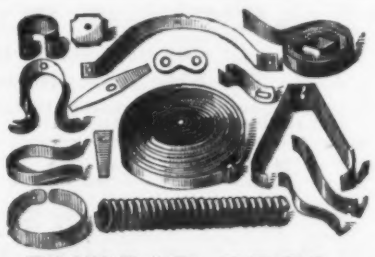

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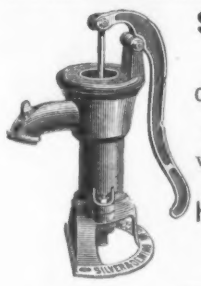

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Fig. 120.

Fig. 209.

Fig. 70.

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that effect, and two days later he did write, accepting the offer made by K in his letter and on the terms stated by him, and this letter was post-marked "Little Rock, February 7, 9 p. m." On the same day, February 7, K, having heard from his agent that C was making his arrangements to buy the property, wrote to C that he had changed his mind, and declined to sell. C had borrowed money to make the cash payment, and in his action to recover damages for breach of the contract, he claimed interest on this loan paid by him. He had a verdict for $611.50, which was affirmed on the appeal of the case—Kempner *vs.* Cohn—to the Supreme Court of Arkansas, except that the interest allowed, $100, was taken from the judgment, as it gave the plaintiff double damages, since the difference in the price is recoverable with interest. Upon the question of the making of the contract by means of the letters, Judge Smith, in the opinion, said: "Did the minds of the parties meet or mutually consent to this contract? When persons are conducting a negotiation through the mail, a contract is completed the moment a letter accepting the offer is posted, provided it be done with due diligence after the receipt of the letter containing the proposal, and before any intimation is received that the offer is withdrawn. Unless the time is limited the proposition is open till it is accepted or rejected, provided an answer is given in a reasonable time. We think the jury found properly on the main question of the case—that of a reasonably prompt acceptance of the offer. The transaction was in real estate, and we do not consider a delay of five days within which to come to a determination, have the title looked into and a conveyance prepared. Had the negotiation been for cotton or other merchandise an earlier reply might have been expected. As to the revocation set up, an offer made by letter which is to be answered in the same way cannot be withdrawn unless the withdrawal reaches the person to whom it is addressed before he has mailed his acceptance. An uncommunicated revocation is no revocation at all."

ICE AND SNOW ON SIDEWALKS.

R. fell on a sidewalk upon which the snow had fallen and had not been removed, and the ice had been permitted to accumulate, and he sued the city for damages for the injuries he had suffered, on the ground that the city was negligent in not removing the snow and ice, and recovered a judgment, from which the city appealed to the Supreme Court of Nebraska, where the case—Nebraska City *vs.* Rathbone—was again decided in favor of the latter. The chief justice, Maxwell, in the opinion, said: "We think the city was negligent here. When snow and ice are permitted to remain upon the sidewalk in such an uneven or rounded form that one cannot walk over, using due care, without danger of falling, the city or town will be liable to a person injured thereby. The question whether a sidewalk was defective or in an unsafe condition is one of fact and not of law. While the courts generally held that for an injury occasioned to a person falling on a sidewalk in consequence of its slippery condition the city will not be liable, yet when the accumulations of snow and ice are permitted negligently to remain the city may be sued, and be compelled to pay damages."

COMMERCIAL PAPER—WORDS AFFECTING ITS NEGOTIABILITY.

J. gave M. his promissory notes, one of which had this clause in it: "My exemption is relinquished," and to the other the words, "I will pay interest and exchange on this note," were added. H. bought these notes and sued upon them. J., who had certain defences against M., set them up in the suit, and he prevailed as against the note in which it was stipulated that interest and exchange should be paid, but in that where the exemption was relinquished judgment was given for H. In this case—Haghitt *vs.* Johnson—brought in the United States Circuit Court, E. D., of Missouri, Judge Brewer, in the opinion, said: "1. The relinquishment of the exemption in no way affected the note as to its amount or the time of payment, and therefor its commercial character was in nowise touched. 2. But by adding the words, 'I will pay interest and exchange on this note,' it became uncertain what the amount to be paid on the note would be, and that is fatal to the negotiability of it. It is essential to commercial paper that its amount shall be exactly fixed or that it may be exactly ascertained by a mere computation.

BANKING—DEPOSIT OF TRUST FUNDS.

Trustees deposited the moneys of their estate in a bank and gave the officers of the bank notice that they were a trust fund. The bank made a general assignment, and it had assets of $500,000, against an indebtedness of $1,500,000. The balance due the trustees, who had an ordinary passbook, was $22,042.52, and they sued the assignee to recover this sum as preferred creditors. In this case—Fletcher *vs.* Sharp—the plaintiffs were defeated, and they appealed to the Supreme Court of Indiana, where the judgment was affirmed. Judge Mitchell, in the opinion, said: "When deposits are received, unless they are special deposits, they belong to the bank as a part of its general funds, and the relation of debtor and creditor arises between the bank and the depositor. This is equally so whether the deposit is of trust money or funds which are impressed with no trust, provided the act of depositing is no misappropriation of the fund. If in receiving a trust fund a bank acted with the knowledge that it was taking the fund in violation of the duty of the trustee, the right of the beneficiaries might be different. In this case, where no impropriety is imputed to the bank in receiving the money, it becomes the debtor of the trustees, and its debt to them was of the same character as its debt to any other depositor, and must be paid in the same proportion."

The Marquette *Mining Journal* has completed a table showing the shipments of all the Lake Superior iron mines. The totals show 1,609,118 tons for the Marquette range, 872,201 tons for the Menominee range, 756,281 tons for the Gogebic, and 304,396 tons for the Vermillion district.

# English Letter.

(*From Our Regular Correspondent.*)

LONDON, January 10, 1887.

GREAT EXPECTATIONS

are being entertained just now in certain departments of the British iron trade, as you will have gathered from my cables prior to the publication of this letter. These vivid anticipations are being built up to a very large extent on the foundation of the current reports as to the condition of the American iron and steel trades. According to the news cabled from your side you are in the early stages of something very like a boom, notwithstanding the obvious efforts which (say some of our knowing ones) are being made on your side to prevent the real state of affairs from being known here, or your prices from rising above the level at which importations may be made at a profit. Recent cables to English newspapers state that Thomas pig iron has been advanced to $22, and that in Tennessee pig iron is going up by leaps and bounds. Whether these statements are or are not true I need not now stay to inquire, but will proceed to state that the bulls at Glasgow have got well "on the rampage," and have by a series of bold and successful operations worked up warrants there to 46/9 @ 47/ ₩ ton—a limit which is astonishing when one bears in mind recent selling values and the exact statistical postion. This bull movement at Glasgow has been helped, I understand, by the relative weakness of the "inside" bears, since the largest and for a long time invariable firm of bear operators have taken to bull proclivities. Any way an enormous business was done in warrants last week, and to-day I have a telegram stating that a large turnover has been effected at the prices I have just quoted. What the ultimate outcome of this wild rush may be cannot be forecast, but it is long odds on an early and rueful collapse, unless in the event of very large purchases of Scotch pig being made for your market. At Middlesboro' there has been, also, a very marked upward movement, owing to the spurt in Scotland, and the official returns, showing that the combination of a limited output and a growing demand has put a much better complexion on affairs thereabouts. The numerous orders placed for new ships, with their fittings, engines, &c., have had due effect, inasmuch as there can be no doubt whatever that that very important branch of the iron trade is once more on the up line. On the West Coast hematites are remarkably strong in all respects, and I hear of "plenty of business" to-day at 47/6 @ 48/6 for mixed lots, which is a very appreciable advance on recent quotations. Heavy buying of hematite pigs for the United States is reported on reliable authority, and there is every likelihood that the prices of these pigs will be speedily at and above 50/ ₩ ton. One report places the quantity bought for your market already at 60,000 tons, while the home steel works are undoubtedly consuming, and certain to want for months to come, very large quantities of these pigs.

Coming now to steel blooms and rails, I hear of numerous inquiries on behalf of your market; indeed, so many are to hand that blooms are dearer than rails, and are almost sure to go up even further, unless in the very probable contingency of your buyers discarding blooms for rails. Your rail mills are said to be "choked up" with orders over the greater part or the whole of 1887, and our own Bessemer concerns are fast being forced into the same position. You will notice that an agreement has been entered into between the German and Belgian rail-makers providing for the non-invasion of their respective markets by the others. It is freely reported that the British railmen are being asked to join this new combination, which would to all intents and purposes mean the revival of the International Rail-Makers' Association. Now, the solicitation may be all right, as the Germans are certainly sighing for the sweets of the old ring (under which they were so dissatisfied), but you may take it from me that the British railmen are not at present in the mood to comply. They feel that they "boss the show" as things now stand, and they perceive no good reason why they should virtually give themselves away when they have really a very soft thing on hand. What is not at all improbable is the very prompt formation of a British Rail-Makers' Association, and a jump in prices of at least 10/ a ton. I don't say, you will please note, that the International Association will not be revived; all I state is that it is not just now deemed advisable. Yet should your market still go ahead nothing in this connection would surprise me. As regards the general state of our metallurgical industries (the tin plate trade included) you will gather some particulars below, but I may say in this place that almost all our reports are couched in terms of strong encouragement. The new year has opened remarkably well, and there is scarcely any single branch of trade in which orders are not vastly more plentiful than they have been for three or four years past.

The winter is an extremely severe one so far, hard frosts—with occasional relapses it is true—prevailing, with an exceptional quantity of snow. Last week the snow fell almost or quite every day in some part or other of the country, and it is now from 8 inches to 1 foot deep all over Great Britain. This, to us, means a severe winter, and one which hinders a good deal of outdoor work. The skate makers have cleared out the stocks which had been accumulating since 1881, so that they, at least, have benefited by the weather. The "seasonable" winter has its drawbacks, but if it only foreshadows a genial spring and summer it will not be without its adequate compensations.

In the Northern iron trade and other departments the wages question is rapidly coming into the foreground, but at the time of writing there is nothing indicative of any strike or dispute of serious import. In West Cumberland the sliding scale recently arranged will soon automatically give the blast furnacemen an advance in their pay.

THE IRON MARKET

is anomalous, yet should peace be preserved there can hardly be a doubt but that a good

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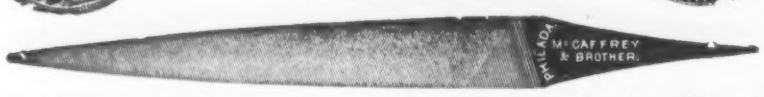


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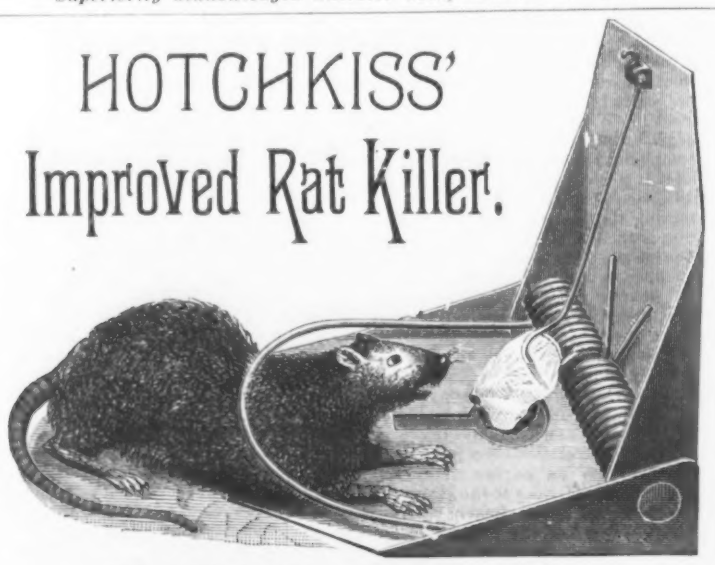

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PAT. APR. 29, 1884.
IMPROVED BY M. M. BARTLETT.
Improvement Patented April 28, 1885.

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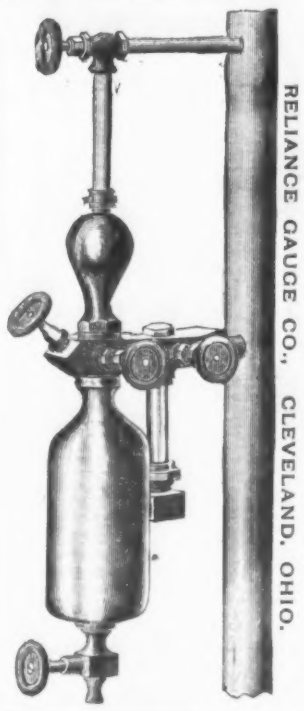

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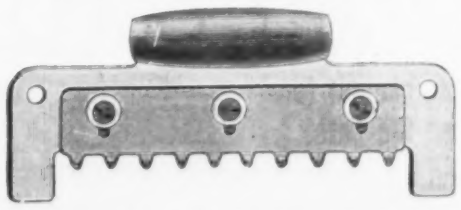

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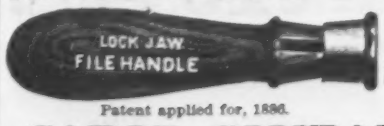


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CABOT COMPANY, Chicopee, Mass.


business will be done during the year. The consumptive demand is increasing, and with the return of confidence there is reason to anticipate that it will steadily grow. But action of the sort that ruled at Glasgow last week will only operate against this condition, and better cause will have to be shown for maintaining the rates that have this week ruled. Glasgow warrant closed at 46/9 ℙ ton. In Cleveland similar advances of an inflated nature have prevailed, there being realized for No. 3, G. M. B., 35/9, buyers being rather more ready at this price than sellers. Forward transactions were barely referred to, neither side caring for the moment to deal with them. But although speculation appears to have characterized that market, there are conditions there which do not apply to Glasgow, the chief feature being the favorable returns of the Cleveland iron masters. Moreover, it is understood that the good effects of the restrictive measures adopted in the district are being appreciated, and with increasing shipments at an early date the prospect is especially encouraging. On the West Coast there has also been manifested marked excitement, and prices have advanced to about 47/6 @ 49/6. Large quantities of this iron have been lately purchased presumably for shipment to the United States. Should this prove to be so, the anticipations recently expressed that 50/ will be touched within the next three months will most likely be realized. Staffordshire iron has also advanced, and makers are pretty confident about the immediate future as to the finished department. These are almost exactly as they ware at the beginning of last month. The improvement has up to now only shown itself in the commoner brands so far as actual prices are concerned, but on the score of orders the better qualities have certainly been more largely inquired for. Sheets, black and galvanized, continue in good demand and prices are firm. Hoops, nails, rods and other kinds of finished materials are also better. For old iron rails, scrap, &c., the amount of business has not been quite so brisk, prices being very firm, with an upward tendency.

Freights have undergone so far no change whatever. From Glasgow to New York pig iron is still 10/ ℙ ton. Steel is much inquired for, and rates remain firm. Makers' books are well filled with orders taken during the last quarter, and it will occupy several months to work them off. It is understood that in a week or two there will be given out a fair amount of business. Blooms, 7 inches x 7 inches, for the United States are not to be had at £3. 17/6; half a crown at least better is quoted. Scotch steel billets have been advanced 5/ ℙ ton. The Welsh Tin-Bar Association have advanced their prices, and now quote for blooms 90/; billets, 92/6; and bars, 100/, delivered at Wolverhampton. Steel rails are more or less quiet, but there is a feeling that it is a calm before a storm. The contracts taken within the last few days include some 7500 tons for the Great Eastern Railway by the Darlington Iron and Steel Company (Limited), at a price either £4. 5/ or £4. 7/6, delivered by sea at Lowestoft. The remaining 7500 tons asked for by the railway company are reported not to have been given out. Bolckow, Vaughan & Co. (Limited), have secured another order for Finland, which leaves about £4. 6/, f.o.b. Middlesboro'. This latter cannot be taken as an open market price, there being little or no competition for the contract.

SCOTCH PIG IRON

is excited as to warrants, and very firm as to makers' brands, the latter owing to larger comparative shipments and a merely fractional addition to the reserve stocks. There are now 75 furnaces blowing in Scotland, against 92 a year ago. In Connal's stores the stock is 840,454 tons (an addition of 133 tons last week), compared with 672,068 tons this date in 1886. Warrants are 46/9 @ 47/, against 40/3 a year since. Shipments are 1377 tons ahead to date, and imports of Middlesboro' pig 1021 tons ahead.

HEMATITE PIG IRON

s also very stiff, with probable further and considerable advances under large American orders and free home buying. Mixed lots are 47/6 @ 48/6, and West Coast makers' brands are from the subjoined quotations to 1/ ℙ ton higher in almost all cases.

| | No. 1. | No. 2. | No. 3. |
|---|---|---|---|
| Cleator | 49/ | .. | 47/ |
| Lonsdale | 47/6 | 47/ | 46/ |
| Workington | 47/6 | 47/ | 46/ |
| Lowther | 47/6 | 47/ | 46/ |
| Distington | 47/6 | 47/ | 46/ |
| Solway | 47/6 | 47/ | 46/ |
| Maryport | 47/6 | 47/ | 46/ |
| Harrington | 48/ | 47/ | 46/ |

There are 47 furnaces at work now on the West Coast, as against 41 this date last year, when stocks were about 100,000 tons in stores only, as against 133,191 tons at present. Pig iron shipments are 4652 tons behind to date, while rail shipments are 1261 tons ahead.

TIN PLATES.

In London the market is decidedly stronger and a good business has been done at advanced prices. Most of the works are reported well off for orders, and a much better business would have been effected but for the firmness of producers. I quote IC cokes ordinary brands nominally at 13/6, f.o.b. Liverpool. At Liverpool there continues to be a brisk demand for tin plates, as well as terne plates, the inquiries for Bessemer steel cokes and coke tins being unusually numerous, and a large number has also been received for Siemens steel plates with coke tinning. However, business continues to be pulled through at 13/ @ 13/6 IC for good coke tins and Bessemer steel cokes, and in some instances even at 13/9 @ 14/ IC. Siemens steel plates with coke finish have been done at 14/ IC. Most of the quotations are, however, now firm at 14/3 IC. There is still a good demand for coke tin wasters, but no sellers under 12/6 @ 12/9 Ternes are still in the ascendant, and the inquiry for these becomes stronger every day; 12/6 @ 14/6 IC is the quotation now firmly maintained, though the top figure mentioned has not yet been secured. Though there is a steady demand for charcoal tin plates, yet these are more inclined to lag behind than the other kinds of tin plates and prices are more difficult to move upward. Prices may be said to range as a general rule between 14/6 and 16/6 IC Most likely many of the inquiries sent out this week both for tins and ternes are simply "feelers," in anticipation of the Birmingham quarterly meeting. The prospects of the trade on the whole are satisfactory.

## Foreign Markets.

FRANCE.

PARIS, January 13, 1887.—*Metals*—Have gradually developed greater activity, with an advance in all but Spelter. We quote *Copper*—Chili Bars, in francs ℙ 100 kg., 102 @ 105; Ingots and Slabs, 108.75; Best Selected, 112.50, and Pure Corocoro Ore, 105. *Tin*—Banca, 271.25; Billiton, 270; Straits, 267.50, and English, 267.50; *Lead*, 33.25 and *Spelter*, 38.50 @ 39. *Iron.*—Merchant is firmly held in this city at 14 @ 15 francs ℙ 100 kg. and Old Rails at 8. In the Ardonnes the first fortnight of the year has brought the continuation of a good run of orders; prices remain firm. The Haute Marne also reports favorably; Coke Merchant is well supported at 13 francs. Three Axle works having temporarily shut down for repairs, the price for Axles in the rough has been raised from 16 francs to 17, and of turned Axles from 25 to 26 francs. Wire Nails are neglected at 21 @ 22 No. 18. St. Etienne reports that the lowering of freight ℙ rail on Iron Ores from the Eastern Pyrenees will give great impulse to Iron manufacture in Central France.—*Moniteur des Intérêts Matériels*

BELGIUM.

BRUSSELS, January 13, 1887.—*Iron.*—The year has opened under favorable auspices both at Liege and Charleroi. Many works have booked orders for months ahead to the full extent of their capacity, and hold prices above the syndicate list. Forge Pig commands $3.90 @ $4.50; Foundry, $5.50; Merchant Iron is firmly maintained at 10 @ 10.50 francs; Beams at 10; Angles at 11.50, and Sheets at 12.50 @ 20.50, Iron and Steel 16.50. This shows an advance of 50 centimes in Iron, and of 1 franc in Steel Sheets. All steel works are doing a large business just at present. They and the blast furnaces have derived the by far greatest benefit from the revival so far, rolling mills and the Structural Iron branch less so. With the extensive filling of orders for export, should the same continue, sufficient activity will spread to content every branch.—*Moniteur Industriel*

GERMANY.

HAMBURG, January 13, 1887.—*Iron.*—The increased animation in the Iron and Steel branch in Rhenish-Westphalia since the commencement of the year has not abated for a moment; on the contrary, as we proceed it seems to assume greater dimensions with a steadily hardening tendency so far as the ruling is concerned. Quite a number of Iron mines that had lain dormant in the Siegerland, Lahn and Dill districts are to return to a state of activity at once in view of the improved general aspect in the Iron trade. Blast furnaces turn out the amount of Pig Iron currently consumed, and barely so, while there are no stocks to speak of. The consequence is that not a ton of Pig Iron can be had for forward delivery beyond April 1 next, except the buyer is prepared to pay a material advance The demand for Merchant Iron is so pressing that the price has been raised to the range of 100 @ 125 marks the ton as to quality. While thin Sheets continue in active request, coarse Sheets are on the contrary neglected still. The sale of wire rods has reached an extraordinary volume, the demand coming from many quarters abroad, but continuing greatest for the United States. As the demand coincides with about as extended a one for domestic use, the price has been raised 15 marks ℙ ton. Steel Rails still form an exception, the only one to be put on record, they being offered by Bolckow, Vaughan & Co. at 118.32 marks ℙ ton delivered, freight and duty paid at Stettin, which nets, if furnished from Rhenish-Westphalia, no more than 100 marks at the mills, and they cannot sell for less than 118.80 marks at Ruhrort, if they are to clear themselves of loss. German car works have meanwhile received domestic orders sufficient in amount to keep them busy. Even the machine shops and foundries have ceased complaining, having secured a sufficiency of occupation for the time being. *Metals*—The metal trade at this point has been getting into better shape, but slowly: Lead is, however, firmly held, and Spelter tending upward on the strength of renewed syndicate negotiations.—*Borsenhalle.*

HOLLAND.

ROTTERDAM, January 10, 1887.—*Tin.*—Our market has exhibited greater strength during the week on the basis of 60.50 guilders ℙ 50 kg. Banca, and 60 @ 60.25 Billington January, March of the latter commanding 60.50 @ 60.75 The Government returns for the month of October are as follows:

*Export of Tin from Holland.*

| | October. 1886. | 1885. | 1884. |
|---|---|---|---|
| To Germany ..... Tons | 372 | 441 | 527 |
| England | 33 | 5 | — |
| Belgium | 110 | 86 | 153 |
| France | 37 | 44 | 63 |
| Hamburg | 53 | 57 | 49 |
| The United States | 38 | 92 | 31 |
| Other countries | 50 | 73 | 94 |
| Total | 756 | 798 | 917 |

| | 10 months. 1886. | 1885. | 1884. |
|---|---|---|---|
| To Germany ..... Tons | 4,326 | 4,080 | 4,259 |
| England | 183 | 461 | 406 |
| Belgium | 907 | 716 | 867 |
| France | 272 | 378 | 323 |
| Hamburg | 455 | 466 | 373 |
| The United States | 398 | 850 | 319 |
| Other countries | 527 | 414 | 477 |
| Total | 7,123 | 7,365 | 7,014 |

—*Koch & Vliterboom.*

SPAIN.

BILBAO, December 31, 1886.—*Iron Ore.*—There has been no interruption in the demand, leading to some contracts notable for their size, four miners having sold no less than 500,000 tons to be delivered in all 1887. Apart therefrom there have been sales of single cargoes of Ore steadily. Rubios Superiores have been bringing 6/4 @ 6/5, and Campanil, 6/6. In spite of the dampness of the weather early in the week shipments have been effected as usual. This may also be said of *Pig Iron*, both for export and home use Ore shipments during the year 3,160,047 tons, against 3,225,982 in 1885. Shipments of Pig Iron, 106,628, of which 57,999 abroad and 42,629 coastwise.—*Bilbao Maritimo y Comercial.*

AUSTRIA.

VIENNA, January 9, 1887.—*Iron.*—Business has been vigorously resumed, production now being fully under control, the demand reviving and prices remaining firm. We quote Pig 40 @ 42 florins ℙ 1000 kg.; Merchant, 98 @ 122.50; Sheets, 140 @ 175, and Beams, 105 @ 110. *Metals* are also looking up generally. We quote Copper, 53.50 @ 57 florins ℙ 100 kg.; Lead, 17.75; Spelter, 18.50; Tin, 129 @ 130; Antimony, 35, and Quicksilver, 220.—*Handels-Journal.*

CHILI.

VALPARAISO, November 19, 1886.—*Copper.*—Cable communication being interrupted up to the 17th inst., only 800 quintals sold at $17, closing with buyers at $17.05, equaling £40 5/7 in England. *Nitrate* has remained unaltered, and sales have been restricted to 145,000 quintals, only a couple of cargoes being available for the current month. The price paid was $2.87½ for 95%. Refined sold for the United States, deliverable next year at 5/4½. For Europe there sold, January shipment, only a trifling lot. The market closes at $2.70, which equals 7/7 in England Charters during the week—6000 tons for Europe, and 1100 for the United States. Coal is steady. *Exchange*, 90 days', 23¾d.—*Weber & Co.*

The Franklin Institute, of Philadelphia, has 2222 members. The receipts for the past year were $32,000. At the annual meeting last week Joseph M. Wilson was elected president; vice president, Charles Bullock; secretary, Wm. H. Wake.

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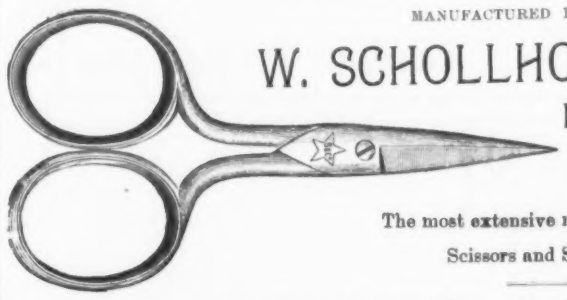

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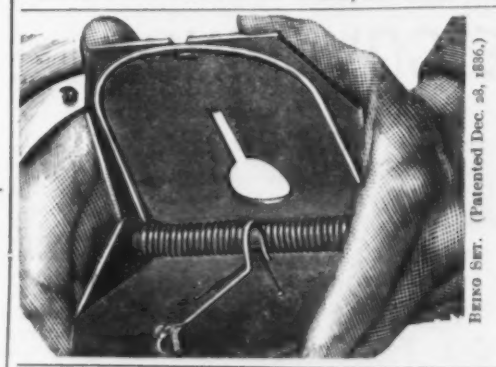

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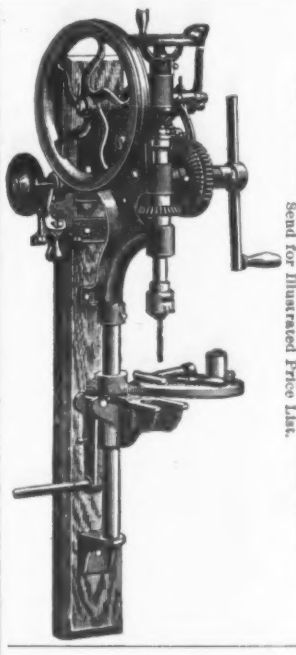

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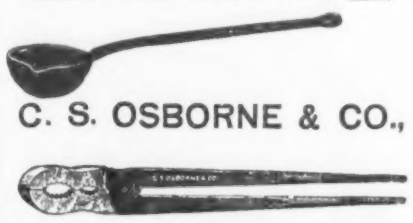

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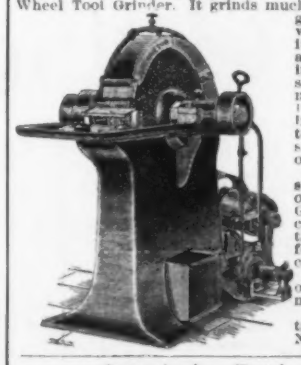

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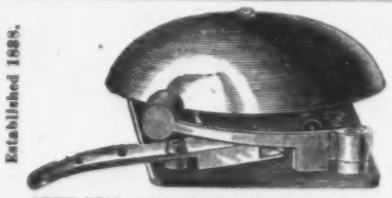

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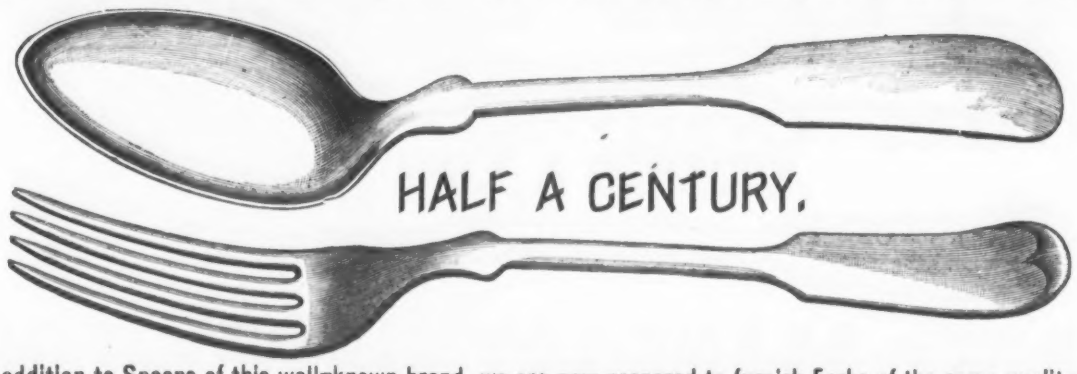

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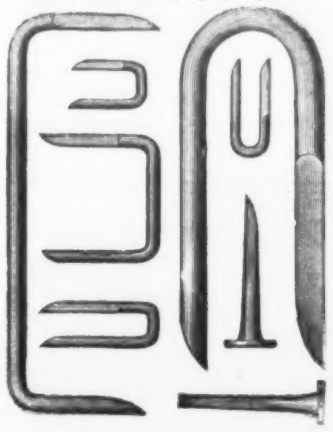

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## THE WEEK.

Vessel owners on the northern lakes are enthusiastic in talking over the prospective gains of the next season, and vessel property is valued at a high figure. The dry-docks and shipyards are full of work.

According to the report of the State Assessor the assessed value of real estate in New York for 1886 was $2,899,899,062; assessed value in 1885, $2,762,348,218; increase of real estate from 1885, $137,550,844. The assessed value of personal property in 1886 was $324,783,241; assessed value in 1885, $332,383,239, a decrease from 1885 of $7,599,958. The assessed value of real estate in 1875 was $1,960,352,703; assessed value of personal property in 1875, $407,427,399. The increased assessed value of real estate in 11 years was $939,446,359. The decreased assessed value of personal property in 11 years was $82,644,118. The figures show that from 1864 to 1886 inclusive real estate has increased $1,738,149,062, while personal property has decreased $14,466,596. Since 1871 the value of personal property has decreased $127,824,451.

A telegram from New Orleans says representatives of Chicago and Kansas City are in that port arranging for the shipment of their goods to Europe by way of New Orleans.

The Italian Government has bought the National Line steamer America and will convert her into an armed cruiser. This will give Italy the fastest man of-war afloat. The price is said to have been $625,000.

A plan to revive American shipping interests, as embodied in resolutions passed by the New York Board of Trade, was defeated in the National Board of Trade convention in Washington, 20th inst. The proposition comprised in its general features the French bounty system, to the effect that 30 cents per ton be granted by the Government for 10 years for every 1000 miles sailed by vessels, sail or steam, built and owned in the United States and engaged in foreign commerce, after 10 years the payment to be reduced to 10 per cent. annually. After an exhaustive discussion the resolution was put to vote, with the following result: In favor, 25; against, 17. Under the two thirds rule the resolution was declared lost.

Edward A. Meneely, the well-known bell founder, died from consumption in West Troy, 19th inst., at the age of 59 years. His father, Andrew Meneely, was the founder of the Meneely Bell Foundry, which was established in 1826. Edward was his father's successor in the bell foundry after the latter's death, having entered the business when but 20 years of age. He continued the manufacture of church bells and chimes up to the time of his death, during a portion of which period, from 1851 to 1876, his brother, George R. Meneely, was associated with him, and more recently his sons, Andrew H. and George K.

A bridge across the Mississippi River at St. Louis has been authorized by both Houses in Congress.

The family of Thomas B. Coddington, the iron importer, have presented to the New York Chamber of Commerce an oil painting of him from the brush of Eastman Johnson. Mr. Coddington, who died recently, had been a member of the Chamber since 1858.

Wheat culture in India has grown to such large proportions and yielded such liberal profits that Indian farmers are now giving more attention to the purchase of farming implements and machinery, and a large demand is looked for. English manufacturers are advised to inform themselves from the reports made to the Government every year respecting the results of the trials of tools, machines and implements in the different provinces, and Americans should take the hint.

The orange trade of Southern California this year will be larger than ever before, and railway competition has reduced the freight charges to Chicago from $3 to $2 per carload.

Secretary Nash, of the Board of Pilot Commissioners, states that there are 103 New York and 65 New Jersey pilots, and the number of boats is 27. The average earnings of pilots at the present time is only $1800 per year.

Herr Krupp, the great gun-maker of Essen, pays taxes on an income of $1,250,000—the largest in all Germany. He stands at the head of the greatest German industry.

The cable railroad being contructed in Brooklyn must be in operation from Fulton Ferry to Broadway by March 15, according to the terms of the lease given by the Atlantic Avenue Railroad Company, who own the franchise.

Shipbuilders in England have received proposals to build two new steamships for the Inman line, each to cost $1,250,000. President Griscom of the International line has left Philadelphia for England to close the contracts.

The Hawaiian treaty was ratified by the Senate with hardly a dissenting voice. The treaty extends for seven years the commercial relations with the Sandwich Islands as they now exist, and an important amendment was made in these words: "His Majesty the King of the Hawaiian Islands grants to the Government of the United States the exclusive right to enter the harbor of Pearl River, in the island of Oahu, and to establish and maintain there a coaling and repair station for the use of vessels of the United States, and to that end the United States may improve the entrance to said harbor and do all other things needful to the purpose aforesaid." Pearl River harbor is a wonderful natural dock about 8 miles long by 3 miles in width, and in its center is an island that was formerly known as Ford's Island, of about 100 acres in extent. No more desirable site for a coaling and naval station could be found in the Pacific Ocean if the entrance to this harbor could be deepened. There are grave doubts whether the Hawaiian Government will assent to the proposed cession, as the Minister at Washington has repeatedly affirmed to the contrary.

Montgomery, Ala., claims to have the most complete electric steel railway in the country. The whole system comprises 10 miles of track, and the electric plant cost $100,000.

Prince Kung of China, through whose influence a college was established about 20 years ago for instruction in the western sciences, and who induced the Government to send about 150 Chinese boys to the United States, has been restored to regal favor. His nephew, the young Emperor, assumes personal control of the Government in February.

Connected with the coal-shovelers' strike in this city a singular incident occurred in Assemblyman Dalton's district, where the poor were suffering severely from lack of fuel. Mr. Dalton bought coal to the value of $1000 for gratuitous distribution, and a boatload reached the dock in this city, but delegate Cullom appeared on the scene, and pronounced it "scab coal" that could not be handled under any circumstances.

Austin Corbin says the capital required to establish a steamship line between Fort Pond Bay, Suffolk County, Long Island, and Milford Haven, has all been subscribed and asks the co-operation of the Government in building a breakwater, to cost $250,000, at the proposed harbor.

Respecting railroad construction in China a letter from Pekin, dated November 26, says: "The rails for the extension of the Kaiping coal road to the Pehtang River, a distance of 21 miles, have arrived, and the work is progressing rapidly. It is understood that one locomotive has been ordered from the Grant Locomotive Works, of Paterson, and that some car trucks have been ordered from the Harlan & Hollingsworth Company, of Wilmington, Del. No other railroad has yet been authorized. Everything must now wait upon the assumption of control by the young Emperor, and the Chinese are naturally fond of waiting."

Charleston claims to have scored a good point over Savannah by securing contracts for between 500 and 1000 tons of pig iron from Birmingham and Chattanooga, to be shipped from that port to New York every week.

French agents in Brazil have opened in that country two exhibitions, one at Pernambuco and the other at Bahia for the display of French products, and a third is contemplated. It is intended that they shall be permanent and be placed in charge of a French subject, whose duty it will be to instruct the merchants and manufacturers at home how to bring their goods to the level of similar foreign goods. To this end samples of foreign makes current in the market will be sent to French manufacturers with hints and instructions to the particular requirements of the Brazilian markets. Germans and English are not idle.

Orders for 148 locomotives, all to be delivered before the close of the year, have been placed by the Atchison, Topeka and Santa Fé Railroad, and contracts let for 9800 freight cars, besides passenger and sleeping cars.

In response to protests made by the Chicago and Joliet rolling mills against high rates the Colorado Railroad Association reduced freights from $11.75 to $9.25 a ton from the Missouri River to common points in Colorado. Under the reduction Chicago mills will at once fulfill a contract for delivering to the Colorado Midland road 20,000 tons of steel rails.

Captain McMickan, of the Cunard steamer Umbria, was presented with a purse of $3000 by a number of New York merchants and brokers, in commemaration of his four hundred and second voyage between Liverpool and New York. So far he has had over 154,000 lives intrusted to his care in his Atlantic voyages, and the property he has carried to and fro mounts well up into the hundred millions of dollars, of which he has lost none.

A grand railroad system is coming into existence on the Pacific Coast, covering the entire section of country from Puget Sound to Mexico, and in a few months all the important connections between the Southern Pacific, Oregon and California and Central Pacific will be completed. Already the Oregon and California, lately purchased by the Southern Pacific, extends south from Portland to within 20 miles of the boundary line between California and Oregon, and

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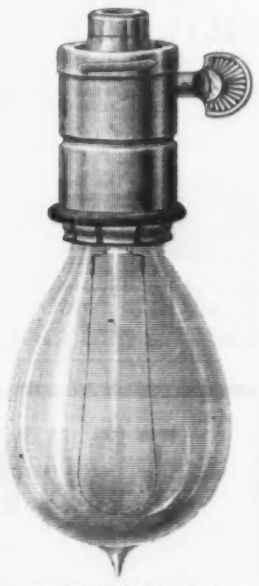

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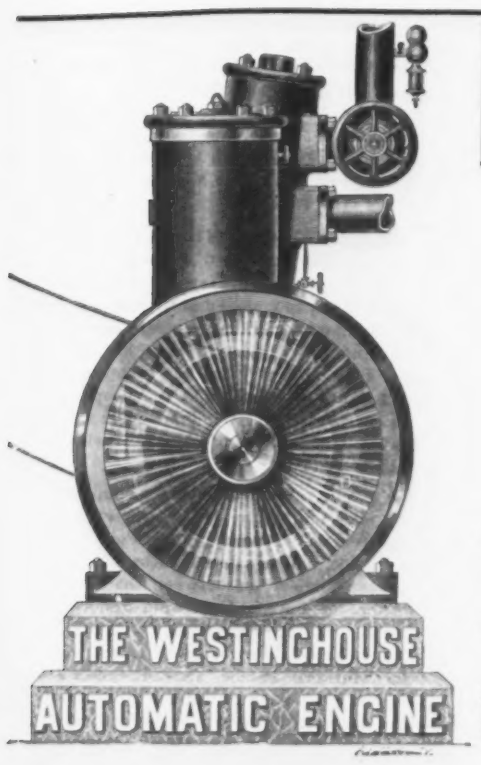


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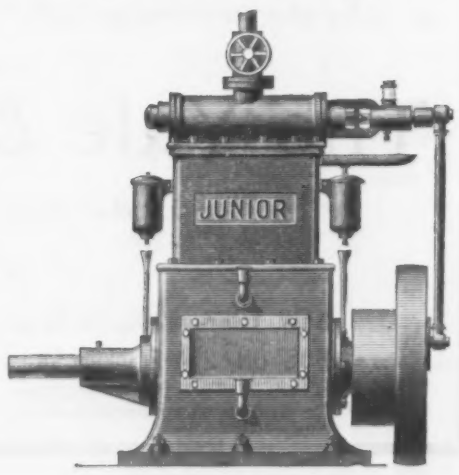

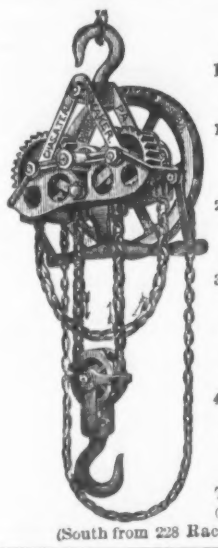

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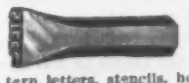

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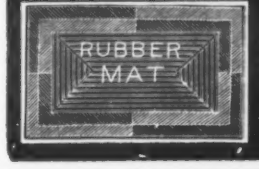


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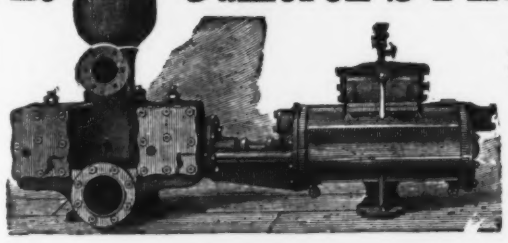

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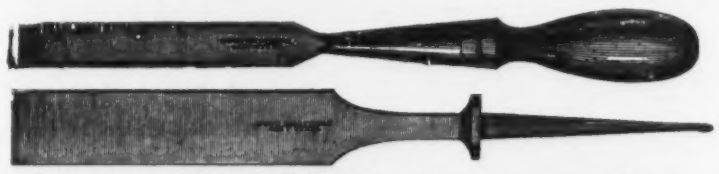

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the remaining gap will be filled without delay. C. P. Huntington, the vice-president of the Southern Pacific Company, says: "This line, which will be running in every portion within eight months, will connect all the sections of this country on the Pacific Coast by a well-equipped railroad, and, morever, it will make a through line from the British possessions on Puget Sound to the sea at New Orleans, and thence directly to Europe. It gives also direct railroad communication with Mexico. It will be a most important line in a military sense. It will put San Francisco a day nearer Portland than she is now by means of steamships."

In his inaugural address Governor Greene, of New Jersey, says the estimated value of the real and personal property in that State in 1850 was $400,000,000, or $409 per capita; in 1880 it was $1,433,000,000, or $1267 per capita. The capital invested in manufactures was in 1850 $22,293,000; in 1880 it was $106,200,000. The number of hands so employed in 1850 was 37,700; in 1880, 126,038.

The Spanish Government has approved of a contract that has been entered upon by the Spanish Transatlantic Steamship Company, which seems to contemplate the establishing of a very extensive service. Their vessels are to carry the mails and perform whatever extra service may be needed for war purposes. The Government is to pay about $1.83 per mile traveled to the American line, and lesser amounts for service to the Philippine Islands, Buenos Ayres and Fernando Po, payments to be made monthly by the Minister of Foreign Relations. All of the vessels are to be of iron or steel and to combine all the improvements known to naval architecture, and with strength sufficient to carry a heavy battery. They are to measure at least 4500 tons for the American and West Indies lines and 5000 tons for the Philippine lines.

Sir Andrew Clarke, formerly Inspector General of Fortifications, and one of the highest authorities on coast defenses in England, condemns the costly system recommended by the United States Board of Fortifications, and advocates as a substitute underground guns worked by electricity. He is quoted as saying: "My plan does away with all fortifications. Instead of alleged invulnerability my principle is invisibility of defenses. When you erect enormous fortifications you offer a target for the enemy's shot. Let your turrets and cupolas be never so thick heavy shot is likely to play the mischief with their mechanism. With your distinguished countryman, Lieutenant Maxim, I have worked out what I call a 'disappearing gun system' which can be applied to the heaviest guns made. This renders fortifications unnecessary. The gun occupies a hole in the ground. When in action it is raised by a sort of hydraulic elevator and after firing sinks into the pit again to be reloaded. Thus it is exposed for only a few seconds. When in the pit it can only be hit by a vertical or plunging fire, and the likelihood of such shots striking their mark is infinitely small. Covered ways shelter the men who load the gun, so that the enemy has practically nothing to aim at. A gun operated in this fashion commands a much wider area than when mounted in a fort. By means of electricity the gun can be raised, lowered, trained and discharged by one man in a position of safety 100 yards or even a mile away. This has been actually accomplished. We are at work on a plan whereby machinery for loading the gun can also be operated by electricity. If this is successful the gun can be wholly worked from a safe distance."

In reviewing the year California boasts of the largest wheat crop since 1880, not less than 30,000,000 bushels, and prices advanced 22½ cents per busnel. The orange crop will yield 2400 carloads for export. The raisin crop more than doubled, and the same is true of the wine crop. Hops yielded 47,000 bales, while prices quadrupled. Tea importations were 2,000,000 pounds larger. Sugar imports amounted to 227,000,000 pounds, or 48,000,000 in excess of the previous year.

The United States Supreme Court on Monday sustained the decision of the Massachusetts Supreme Court in the case of the United States *vs.* Schlesinger, in which the duty to be assessed upon an importation of steel rails was in dispute. The question taken to the United States Supreme Court was whether the importers were permitted to deny the conclusiveness of the decision of the Secretary of the Treasury, made on protest and appeal, without having previously paid the duties assessed and brought suit. The Massachusetts court recognized this right on the part of the importers, and passed upon the question of fact involved, and this action is sustained.

On the subject of child labor Professor Adler said in his last lecture: "The factory laws of New York should be amended. The law includes children under 13 in factories, but does not apply to stores. It should be made to cover mercantile as well as manufacturing establishments. Little cash boys and little cash girls should be in the schools. The law requires that young children, whether at work or not, should attend school 14 weeks per annum. It should require attendance the whole school year. There are only two factory inspectors in this city, and during four months they visited 857 manufacturing establishments, but there are in the city upward of 46,000. They visited 200 factories in New York and Brooklyn, but in New York and Kings Counties it is estimated that there are 18,000 manufacturing establishments. Not a few parents perjure themselves in order to get their children to work. Such persons should be prosecuted and punished. If we seriously desire the benefits of factory legislation we must provide the proper machinery for its enforcement."

There are in Philadelphia 300 active building associations, carrying mortgages on real estate to the value of $50,000,000, which are being paid off in small monthly sums. Three-fourths of these mortgages are on small houses, worth from $800 to $3000, and the occupants, instead of paying rent, are paying off the mortgages, and will eventually own those houses at but little more than they would have paid for rent. M. J. Brown, secretary of the league, says the gains of 115 of these societies last year amount to $1,805,000, and that not one shows a loss.

In the House of Representatives on Monday, Mr. Thomas, of Illinois, a member of the Naval Committee, introduced a bill providing for the construction of two steel cruisers of the type of the Baltimore, at $1,300,000 each, and five steel gunboats of the type of gunboat No. 1, at a cost of $520,000 each, exclusive of armaments, and for six 24 knot torpedo boats.

The House Committee on Naval Affairs have agreed on the bill making appropriations for the naval service to grant $600,000 for a new dry dock in the Brooklyn Navy Yard, and the same amount for a dry dock at the Norfolk Navy Yard.

Manufacturers in the Connecticut Valley are becoming much alarmed by the coal prospect, as supplies are running short.

Canadian railroads and canals last year transported more freight than ever before, and the Montreal *Herald* shows the growth of foreign trade since the deepening of the St. Lawrence by the following comparison of tonnage at that port:

| | Number. | Sailing. | Steam. | Total tons. |
|---|---|---|---|---|
| 1850 | 211 | 211 | nil | 46,156 |
| 1868 | 403 | 311 | 92 | 186,104 |
| 1886 | 703 | 171 | 532 | 809,609 |

During the past week many experiments with the Julian electric motor have been made upon the Third avenue surface line, and the results, the officers of the road say, have been quite satisfactory. The power is supplied by batteries stowed under the sides of each car, and a rate of from 3 to 20 miles an hour can be obtained. This motor is quite generally used in Paris, and the expense of running these cars is said to be 15 per cent. less than the cable system.

The adaptability of the electric light for use on board ship has been demonstrated to the satisfaction of the Navy Department, and every vessel hereafter constructed, as well as those now about completed, will be provided with the apparatus necessary to produce the light.

The population of France at each census is shown to increase in a slower ratio. According to the return just published the increase in the last five years was 546,000. The increase on the five years ending 1881 was 776,000. Of the increase during the last five years 150,000, or more than a quarter of the total, is accounted for by the influx of foreigners. The total is now 38,218,000.

Postmaster Pearson's report of the work of the Post Office for the year 1886 indicates that the loss of revenue which was at first caused by the reduction of letter postage from three to two cents has been overcome by the increase of business. The gross revenue of the Post Office in this city last year was nearly $4,600,000, figures which have hardly been exceeded at any time.

The *Badische Landeszeitung* announces that arrangements have been made to hold an exhibition of American products at Mannheim in the autumn. Illustrations of life in America will also be presented, and the exhibition is especially intended to show what Germans have done to promote culture and business enterprise in the United States. The committee having the matter in charge is composed of the leading citizens of Mannheim. The exhibition, which the management hopes will become permanent, will be entitled "The Central Museum of American Products." The necessary financial support has been secured from Mannheim and Frankfort, and from America.

The Staten Island Rapid Transit Company have awarded the contract for building three steel ferry boats to Messrs. Harlan & Hollingsworth, of Delaware. They are to cost $100,000 each, and are to be ready by June or July.

The annual meeting of the American Society of Civil Engineers was held in this city last week. The total membership is 1019. The officers elected were: President, W. E. Worthen, of New York: vice-presidents, Thomas E. Keefer, of Ottawa, and Thomas R. Rowland, of New York; secretary, John Bogart, of New York.

# The Iron Age

AND METALLURGICAL REVIEW.

New York, Thursday, January 27, 1887.

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## Annual Consumption of Steel Rails.

We have for years placed before the trade some figures intended to afford a means of gauging the probable consumption of steel rails. Now, more than ever, other branches of the trade are to some extent dependent upon the magnitude of the demand for this, our purpose. It is the controlling factor in the manufacture of Bessemer steel, and that in turn, directly or indirectly affects ore, pig iron nails, wire and a number of other industries. It may be granted that to a considerable extent the influence of a greater demand has been felt before the statistician can measure its force. We believe, however, that a study of the figures will prove widely profitable.

The demand for rails comes from two sources—for new construction and for renewals. A very fair approximation to the former may be estimated from the careful compilations of new mileage added annually to the network of railroads in the country. There are, however, some difficulties to contend with which render accurate statements of consumption for this purpose impossible. The quantity of rails required per mile of track varies within very wide limits. It is only 61.5 short tons for narrow gauge and as high as 100 tons for standard roads. Besides this, the weight of the rails used is much greater to-day than it was 10 years ago. It may be assumed that in 1867 the average was 90 tons per mile, gradually increasing until it is now 95 tons per mile. Another point to be considered is the mileage of second track, sidings, &c. It, too, has steadily increased. From present statistics it would appear that the accessory tracks add as much as 23 per cent. to the length of road in the United States, and therefore at least 20 per cent. may be added to the number of miles of new road built every year to get at the actual mileage of track laid. Thus a series of figures are obtained on the basis of the number of miles of railroad constructed annually, from which a fair estimate of the quantity of rails used for this purpose may be deduced. On the other hand, we know from the statistics of production of iron and steel rails, carefully collected annually by the Iron and Steel Association, and from the imports of rails, how large the apparent consumption is every year. This, of course, neglects the stocks in makers', consumers' and importers' hands, which, however, in the case of rails are a less important matter than in the majority of other commodities. The difference between this apparent total consumption and the quantities used for new mileage would fairly represent the consumption for renewals. The following table has been computed in the manner indicated, the basis being the net ton:

| Year. | Inc. of mileage. | Total consumption. | New roads. | Renewals. |
|---|---|---|---|---|
| 1867..... | 2,449 | 627,157 | 279,200 | 347,957 |
| 1868..... | 2,979 | 756,795 | 339,600 | 417,195 |
| 1869..... | 4,615 | 906,749 | 504,000 | 402,749 |
| 1870..... | 6,070 | 1,019,153 | 663,000 | 356,153 |
| 1871..... | 7,379 | 1,341,434 | 814,800 | 526,634 |
| 1872..... | 5,878 | 1,530,850 | 648,900 | 881,950 |
| 1873..... | 4,107 | 1,148,849 | 453,400 | 695,449 |
| 1874..... | 2,105 | 837,724 | 234,900 | 602,824 |
| 1875..... | 1,712 | 810,770 | 191,000 | 619,770 |
| 1876..... | 2,712 | 879,916 | 302,600 | 577,316 |
| 1877..... | 2,281 | 764,744 | 257,300 | 507,444 |
| 1878..... | 2,687 | 882,695 | 303,000 | 579,695 |
| 1879..... | 4,721 | 1,157,420 | 532,500 | 624,920 |
| 1880..... | 7,174 | 1,752,526 | 817,800 | 934,726 |
| 1881..... | 9,789 | 2,230,421 | 1,116,000 | 1,114 421 |
| 1882..... | 11,591 | 1,912,921 | 1,321,000 | 591,921 |
| 1883..... | 6,755 | 1,399,671 | 770,100 | 629,571 |
| 1884..... | 3,977 | 1,144,850 | 453,378 | 691,472 |
| 1885..... | 3,131 | 1,096,667 | 356,934 | 739,733 |
| 1886..... | 8,649 | 1,700,000 | 985,986 | 714,014 |

Repeating former comments on this table, it will be noted that in a general way the quantities for renewals fluctuate far less violently than do the amounts used for the construction of new roads. The figures for the latter lap over, of course, from year to year—that is to say, a considerable proportion of the rails produced in one year are in reality for consumption in the next, and the variations from year to year, therefore, appear more violent than they probably are. This partly explains such apparent anomalies as are exhibited by the fact that, although the mileage of new roads built in 1882 was much larger than it was in 1881, the consumption of rails shows a heavy decline. Of course, being deducted from the tonnage for new road-bed, the requirements for renewals are in a similar manner less subject to sudden variations than indicated in the table.

What the trade will be most deeply interested in are the possibilities of the current year. Estimates of new mileage go as high as 12,000 miles. This, according to our method of estimating requirements, would call for 1,368,000 net tons. Adding only 750,000 tons for renewals we would reach a total of 2,118,000 tons. With our rail capacity at a maximum of 2,000,000 net tons, this would call for heavy importations. Taking the same rate of renewals, the aggregate would be, for 11,000 miles, 2,000,000 tons, and for 10,000 miles about 1,900,000 tons. It may be urged in comparing the current year with that of 1881 and 1882 that our capacity of production has grown enormously since then. It must not be forgotten, however, that even at so late a date a very large quantity of iron went into track. The following figures will show this:

| | 1881. Net tons. | 1882. Net tons. |
|---|---|---|
| Steel | | |
| Production..... | 1,355,519 | 1,460,920 |
| Imports..... | 249,308 | 182,135 |
| Total..... | 1,604,827 | 1,643,055 |
| Iron. | | |
| Production..... | 488,581 | 227,874 |
| Imports..... | 137,013 | 41,992 |
| Total..... | 625,594 | 269,806 |
| Grand total..... | 2,230,421 | 1,912,921 |

In the two years of our greatest consumption, iron rails entered into the track to the extent of 895,460 net tons, or about 450,000 annually, the bulk of which was probably used for renewals, which then were particularly heavy. They are not now an element in the situation. The fact remains, then, that if we built only 10,000 miles of road, and renewals did not exceed 750,000 net tons, our rail mills could cope with the business, were it not for one fact. Deliveries are generally asked for during the building season, which in some of the important sections of the country ends with the approach of winter, thus crowding work into certain months and forcing the railroads to purchase abroad. Another circumstance to be noted is that, at present relative prices at home and abroad, the Gulf and Pacific States are open to the invasion of the foreign product. Every mile of road which we build beyond 11,000 miles, every ton above 750,000 tons required for renewals, means so much more business to foreign rivals.

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Vessel owners are expecting a highly remunerative season on the Great Lakes this year. The enormous demand for iron and steel carries with it an increased consumption of Lake Superior iron ore, and the quantity to be transported from ports of shipment to lower lake ports will be greater during 1887 than in any previous year, unless some very remarkable trade convulsion should occur in the meantime. In anticipation of an extraordinary demand upon their carrying facilities, vessel owners are refusing to make contracts for any considerable part of the shipping season. Not only has $1.40 per ton been refused for cargoes of ore from Escanaba, but vessel owners are even predicting that $3 will be paid from Ashland, Marquette and Two Harbors before next fall. As far as they care to make contracts they are holding out firmly for $1.50 from Escanaba, $1.75 from Marquette and $2 from Ashland and Two Rivers. This is a very serious matter to iron-ore shippers and iron and steel manufacturers. A high lake freight on ore may make its cost to furnacemen so unreasonably high as to interfere with the production of pig iron in the West. If the consumption of Lake Superior ore should in consequence fall short of expectation and vessel owners find their craft not fully employed they will have only themselves to blame. It is asserted that the Interstate Commerce Bill will divert a great deal of business from the railroads to the lakes when it is put into operation, and this will be an additional reason for marking up lake freights. But it is probable that vessel owners attach too much importance to this influence in their favor.

## Our Australian Trade.

Our trade with the six Australian Colonies and New Zealand has increased considerably during the last fiscal year, due chiefly, we presume, to the rise in wool, of which we have been importing more than formerly, while Australia has taken American goods more freely. As Australia grows more wool than any other country, the enhanced value of the staple—which may last many years—perceptibly increases the consumptive capabilities of those colonies, and they become all the more valuable customers of ours. The six colonies, New Zealand and the Fiji Islands, taken together, cover an area of 3,083,440 square miles, with a joint population of 3,462,149. There is no British military force in any of them except Fiji, but the militia numbers 10,000 men, and a British squadron of seven large men-of-war is kept in those waters supported by eight colonial armed vessels.

Immigration and emigration is represented by the following figures: Immigration in 1883, 215,275 persons; in 1884, 235,573; emigration, 140,372 and 157,447 respectively. Fiji received 2559 immigrants in 1883, against 3272 in 1884, while there emigrated 1345 in 1883 and 753 in 1884. The indebtedness of the colonies is considerable, £120,850,558 in 1884, but nearly all this money has served to build railways and achieve other indispensable public works of great usefulness now that they are finished. Income in 1884, £22,297,830; outlay, £24,747,593. There were in operation in 1884 altogether 7497 miles of railway and 1804 building. The extent of Australian railroads compares as follows with the mileage in operation in other British possessions as under:

| | Miles. | | Miles. |
|---|---|---|---|
| British India, 1886... | 12,376 | Natal ..... | 116 |
| Canada, 1885 ..... | 10,773 | Mauritius..... | 92 |
| Australia..... | 7,497 | Trinidad..... | 51 |
| Cape of Good Hope.. | 1,562 | Jamaica ..... | 25 |
| Ceylon..... | 177 | Guiana..... | 21 |

Together, 32,690 miles.

Considering the comparatively small population of Australia, communication by rail is well developed. There is, in fact, no country where so few inhabitants have accomplished so much in every branch of human activity in so short a time, if we except California and some of our Western States and Territories.

Australian trade in 1884, in thousands of pounds sterling, is shown in the following table:

| | Import. | | | Export. | | |
|---|---|---|---|---|---|---|
| | Total. | From England. | Of which specie and bullion. | Total. | To England. | Of which specie and bullion. |
| New S. Wales.. | 22,827 | 11,423 | 1,670 | 18,251 | 7,684 | 950 |
| Victoria ... ... | 19,202 | 9,149 | 1,278 | 16,050 | 7,745 | 2,019 |
| Queensland..... | 6,382 | 2,521 | 264 | 4,674 | 1,715 | 934 |
| South Australia | 5,749 | 2,983 | 360 | 6,524 | 4,082 | 36 |
| West Australia. | 521 | 223 | 16 | 406 | 280 | .... |
| Tasmania .. ... | 1,656 | 642 | . | 1,476 | 360 | 132 |
| New Zealand... | 7,964 | 4,934 | 338 | 7,062 | 5,158 | 996 |
| Total..... | 64,001 | 31,875 | 3,926 | 54,573 | 27,024 | 5,067 |
| As compared with 1883 ..... | 61,571 | 31,708 | 2,471 | 55,729 | 27,713 | 7,653 |

The excess of import over export arose from the importation on a large scale of railroad and telegraph material.

*Wool Export in Thousands of Pounds.*

| | 1883. | 1884. |
|---|---|---|
| New South Wales ..... .... | 10,136 | 9,282 |
| Victoria..... | 6,055 | 6,343 |
| Queensland ..... .. ... | 2,278 | 1,890 |
| South Australia..... | 2,407 | 2,617 |
| West Australia..... | 225 | .... |
| Tasmania..... .... | 450 | 454 |
| New Zealand..... .. | 3,014 | 3,368 |
| Total..... . ..... | 24,565 | 23,954 |

*American Trade.*

| Fisca year. | Import. | Domestic export. |
|---|---|---|
| 1885..... ..... | $2,823,398 | $10,584,138 |
| 1886..... ..... | 3,859,360 | 10,981,915 |

The American steamship line from San Francisco has notably contributed to the rapid increase of our export to Australia. In order to stimulate immigration, Queensland pays the passage of servant girls and farm hands. New Zealand does not give a free passage to the latter, but has reduced it to $50, provided they can show that they possess $500, and $250 for each member of their family over 12 years of age. To West Australia the passage money of agriculturists is reduced to $20, but they must make a deposit, refunded them on arrival. Emigration to Australia from Europe would be greater but for the great distance, even by by steamer, but the recent discoveries of new gold fields may tend to increase it. Australia is certainly a country where hard-working men have very fair prospects before them.

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An old observer on Western rivers laments the general falling off of business done by water transportation lines during the last season of navigation. This is true of business at all ports in the Mississippi Valley, as well as at St. Louis. At the steamboat wharf in St. Louis, where 50 steamers were formerly moored, only five were to be seen during the past season receiving or delivering cargo. Railways are carrying freight in every direction, regardless of mountain ranges or the course of rivers, and the bridges which they cross are an impediment to navigation, which increases every year. Rivers can never recover their former importance as channels of trade. The Erie Canal, and the Hudson River as a continuation of the canal, enjoy exceptional advantages in holding a relation to the trunk lines of railway somewhat akin to that of the slow-going ocean tramp as compared with the swift liners which charge high rates. In most cases, rivers are auxiliaries only in a very subordinate sense, and that on a steadily descending scale as the years go by. The much-trumpeted barge lines on the Mississippi, which were to take the grain products of the northwest direct to the Gulf of Mexico, are heard of no more. What the enlarged Welland Canal may be able to accomplish under substantially the same conditions we shall see when that great work is finished, but the Canadian Pacific, now clamoring for business and putting out lateral branches, will not help it.

## The Position of Wire Rods.

So far as the great steel manufacturing industries in this country are concerned, they have practically covered that part of their requirements of raw material which they have been able to purchase for delivery far into the year. This embraces the greater part of the foreign stock which the rail mills may want in 1887, barring contingencies such as shortage in the supply of coke, which would reduce the make of Bessemer pig, or such contingencies as the breaking down of machinery, which might induce purchases of blooms, billets and slabs. To this there is one striking exception, and that is the supply of foreign wire rods. The business in them is generally done for spring and summer delivery late in January and during February. Statistically, less is known concerning wire rods than of any other single great branch of the iron trade. We do not know the production during past years of the domestic mills, nor have we any exact data as to their capacity. We know only in a general way that American works have by improved appliances steadily increased the product per train, and that a number of large, well-equipped new mills have been added to the capacity of the country. The only part of the supply concerning which we have accurate data for a few years back, is the quality of wire rods imported. Even less is known to the trade in general concerning the fluctuations in the consumption beyond the general fact that they have been large. For years the demand for barb wire advanced by leaps and bounds, and after that a more quiet rate of development has followed. The wire nail trade is rushing into prominence as a consumer of wire and wire rods. It was recently stated on good authority that in 1886 the output of iron nails was 600,000 kegs, against 400,000 kegs in 1885, and that it is expected that fully 1,000,000 kegs will be reached in 1887. If this should be realized, the call for raw material from this source alone would not be far from 50,000 tons. In addition to this we have the constantly growing consumption for market wire for hundreds of different purposes, while the quantities required for electrical purposes may be expected to remain nearly stationary under the competition of hard-drawn copper wire.

Buyers of wire rods must therefore face the somewhat difficult problem of deciding how largely they must buy to cover the coming demand from customers, and to what extent it is good policy to join in the purchasing movement of the next two months, or whether they will do well to wait.

It is stated that the western buyers come into the market "like a flock of sheep," and invariably raise prices upon themselves, which drop back later in the year. A study of the following table may serve to indicate to what extent this is true, covering as it does the monthly fluctuations for the last two years and a half:

*Prices of Foreign Steel Wire Rods.*

| | | |
|---|---|---|
| 1884. | | |
| July..... | $46.00 @ | $47.00 |
| August ..... | 46.00 @ | 46.50 |
| September..... | 45.00 @ | 46.00 |
| October..... | 45.00 @ | 46.00 |
| November..... | 44.00 @ | 45.00 |
| December ..... | 44.00 @ | 45.00 |
| 1885. | | |
| January..... | 43.00 @ | 45.00 |
| February..... | 42.00 @ | 43.00 |
| March ..... | 40.00 @ | 42.00 |
| April..... | 38.50 @ | 40.00 |
| May ..... | 38.00 @ | 39.00 |
| June ..... | 38.50 @ | 39.00 |
| July..... | 39.00 @ | 40.50 |
| August..... | 39.50 @ | 41.50 |
| September..... | 41.00 @ | 41.50 |
| October ..... | 40.50 @ | 42.00 |
| November..... | 41.00 @ | 42.00 |
| December ..... | 41.50 @ | 42.50 |
| 1886. | | |
| January..... | 42.00 @ | 43.00 |
| February ..... | 41.50 @ | 42.00 |
| March..... | 40.50 @ | 41.50 |
| April..... | 40.00 @ | 40.50 |
| May..... | 39.50 @ | 40.00 |
| June..... | 38.00 @ | 39.50 |
| July ..... | 37.00 @ | 38.00 |
| August ..... | 36.00 @ | 37.00 |
| September..... | 36.50 @ | 37.50 |
| October..... | 36.00 @ | 37.00 |
| November..... | 37.00 @ | 38.00 |
| December..... | 38.00 @ | 40.50 |

It will be observed that the decline was almost continuous from July, 1884, to July, 1885, when higher prices prevailed for some time, until last February another heavy fall set in, lasting into the autumn of 1886. This drop was largely due to resales of rods purchased for American account in Germany, and to the heavy decline in billets in that country, which enabled those rod mills that had not contracted ahead to cut into prices deeply, the decline going down to 90 marks at works. The recovery was initiated by purchases of billets, slabs and blooms, principally for this country, which rendered the steel works more independent and caused a rise in raw material. There is every indication that following this rods were contracted for quite heavily for American importers, so that now those works that are not booked ahead are able to hold out for higher prices.

Almost the entire quantity of wire rods imported into this country comes from Germany. According to official statistics the production of wire rods and of wire in that Empire was as follows for a series of years:

*Production of Wire Rods and Wire in Germany, Metric Tons.*

| | Iron. | Steel. | Total. |
|---|---|---|---|
| 1879..... | 188,902 | 4,032 | 192,937 |
| 1880..... | 222,902 | 10,800 | 233,122 |
| 1881..... ... | 233,422 | 58,615 | 292,038 |
| 1882..... | 254,018 | 124,003 | 378,021 |
| 1883..... | 214,361 | 145,030 | 359,391 |
| 1884..... | 222,903 | 186,202 | 409,105 |
| 1885..... | 220,811 | 174,313 | 395,124 |

The production of 1886 is as yet unknown, but presumably was not much larger than in 1885. Since we take only a very moderate quantity of iron rods, the most interesting figure to us is the product of steel. We have no specific data concerning the capacity for producing steel wire, but judging from the notes relating to the magnitude of German works, we think it likely that if pushed they could turn out more than 200,000 tons. It is evident from the rapid advance in Germany—over 20 marks per ton, or close on to $5—that other influences besides a rise in raw materials must have been at work, although it is claimed that that was the cause of the advance. The buying of blooms and billets from this side has been chiefly done in Great Britain, so that it is likely that importers here have contracted heavily in anticipation of higher prices here. Reviewing the situation generally, it is difficult to escape the conclusion that the upward tendency has not yet exhausted itself. There is one contingency to which American buyers of wire rods should give some consideration. Should Germany become involved in a war, of which there is at least a possibility, then there would be very serious trouble in securing the supplies of German rods contracted for, and a famine in this class of raw material would undoubtedly result. Aside from other considerations, therefore, buyers will do well, other things being equal, to give preference to the domestic article.

## Interstate Commerce.

As foreshadowed in these columns last week, the so-called Reagan Interstate Commerce Bill went through the House promptly, backed by a vote of 219 to 41, a majority so strong in its favor that even the Executive veto would be unavailing, so that it is certain to become a law. It is notorious that the leading railway corporations have been almost a unit in their hostility to the measure, but the popular voice has grown vehement in its denunciation of alleged monopolies, and, most of all, apprehensive of the formidable combinations which are gridironing the continent with rails. For this special development of public opinion the arbitrary course long pursued by the Pacific railroad companies are largely responsible. The railway corporations will doubtless without delay urge the appointment of commissioners by the President before the adjournment of the session who shall possess all needed qualifications, taking good care that none are inimical to their interests. It is needless to suggest that the mercantile classes should be no less vigilant. Experience in the practical working of the law will show wherein lie its principal defects. Those provisions designed to equalize long-haul and short-haul rates will challenge the best expert talent at command for their practical enforcement. The bill in its general aim is an attempt to do away with unjust discrimination, but it is charged that an equalization of the rates of freight as between remote and intermediate points must check that part of the transportation business which heretofore has been done at bottom rates—viz, that coming under the long-haul classification, thereby interfering with the settlement and growth of the country. In other words, we are told that "through rates will be increased to the discomforture of distant shippers." A substantial argument to the contrary will be interposed by all internal routes of navigation, by the Northern lakes and by the Mississippi River. Already we hear of a large meat packer in Chicago who discovers that he can supply his European customers at less cost for transportation via New Orleans, and vessel owners at Buffalo, Detroit and Cleveland are counting upon large profits in competition with railways under the Interstate law. It is safe to assume that ultimately all these questions will have an equable adjustment, as all interests point to such an issue, and by the most expeditious methods.

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It is probably not more than 20 years ago that single-acting steam engines began to receive attention in the United States. Previous to that time work in this particular field of engineering was confined mainly to English builders, and even with them success in solving the problems which the single-acting engine presented seems to have been difficult to attain. More recently, however, substantial progress has been made both here and abroad, and, if we may judge from the number of engines of this type which are now in use, they have met the existing requirements very satisfactorily. At the same time we cannot ignore the fact that as

regards economy of working they undoubtedly leave much to be desired, and, while we have not yet seen test figures which have given accurate information on this point, we have little hesitation in saying that comparative records, were they available, of single-acting and other forms of engines used for the same class of work would reveal some startling results. For the Willans engine, an English design, it is true, a performance of a little over 23 pounds of steam per horse-power per hour has been claimed—a very admirable result, no doubt, but one which yet lacks confirmation. As a matter of fact the main point in the building of single-acting engines has hitherto been adaptation to special purposes, and it will be easily understood that under the circumstances steam economy has been made subservient to simplicity, speed, compactness and steady motion. While in themselves great advantages, these points cannot in time be held to counterbalance the all important question of fuel consumption, and with the possibility of building single-acting engines of high efficiency there is every reason to look for improvement in their design at no distant period.

## Inventions by Employees.

An important decision, defining the rights of employees to inventions made by them in the discharge of the ordinary duties of their positions, has been rendered by the Supreme Court of the United States, in the case of the Hapgood Plow Company and others against Horace L. Hewitt, on appeal from the Circuit Court of Indiana. The suit was brought to require Hewitt to assign to the plaintiffs letters patent obtained by him for an improvement on plows made while superintendent of the company.

The facts as established by the evidence are briefly these: Hewitt was superintendent of manufacturing in the works of the Hapgood Plow Company. During the term of such service he was directed by the president to devise and build an iron sulky plow according to a plan suggested by the president. This he did, working out the ideas which had been communicated to him and embodying several gained from others connected with the company, and finally produced a construction satisfactory to the president. During this time he was in regular receipt of a salary of $3000 per year, and such time as he gave to the sulky plow was in usual business hours. He used the company's materials, and the men who did the manual labor were on the company's pay-roll. In short, the work was done wholly in the company's time, with the company's materials and under direction of the president. It was fully understood that the results should belong to the company, who were to make sulky plows like it if the experimental machine was satisfactory. After the experiments were completed Hewiett was sent to Chicago at the company's expense to have malleable castings made after the pattern of those in the model, and the company thus began manufacturing the new plows. Hewitt never made any claim to a proprietary right in the result of his labor while in the company's employ, and no such right was recognized by the officers of the company. No patents were applied for.

When Hewitt's connection with the company ceased the president purchased his stock, and he no longer had any interest in the business. The company meanwhile engaged in the manufacture of the new plow with some success. On the 14th of January, 1878, four months after he had left the company's employ, Hewitt applied for a patent on the sulky plow he had designed, and it was issued to him with claims covering certain features of construction which, with his knowledge and consent, the company were using in their regular business. Having secured his patent he asserted for the first time his claim to the device, and threatened the company with proceedings at law for infringement in manufacturing without license.

If there had been nothing to further complicate the case it would seem as if the company's rights were clear and unmistakable, and that a suit to compel Hewitt to assign his patent to the company would have been successful. Meanwhile, however, Hapgood & Co. sold its business to the Hapgood Plow Company. The suit against Hewitt, begun by Hapgood & Co., was continued by the Hapgood Plow Company. The decision of Judge Blatchford, for the Supreme Court, concludes as follows:

The decision of the circuit court (11 Biss., 184) was placed on the ground (1) that Hewitt was not expressly required by his contract to exercise his inventive faculties for the benefit of his employer and there was nothing in the bill from which it could be fairly inferred that he was required or expected to do so; (2) that whatever right the employer had to the invention by the terms of Hewitt's contract of employment was a naked license to make and sell the patented improvement as a part of its business, which right, if it existed, was a mere personal one and not transferable, and was extinguished with the dissolution of the corporation. We are of opinion that the views taken of the case by the circuit court were correct. There is nothing set forth in the bill as to any agreement between the corporation and Hewitt that the former was to have the title to his inventions or to any patent that he might obtain for them. The utmost that can be made out of the allegations is that the corporation was to have a license or right to use the inventions in making plows. It is not averred that anything passed between the parties as to a patent. We are not referred to any case which sustains the view that on such facts as are alleged in the bill the title to the invention or to a patent for it passed. In McClurg vs. Kingsland (1 How., 202), the facts were in some respects like those in the present case, but the decision only went to the point that the facts justified the presumption of a license to the employer to use the invention as a defense by him to a suit for the infringement of the patent taken out by the employee. The Circuit Court cases referred to do not support the plaintiff's suit. In Continental Windmill Company vs. Empire Windmill Company (8 Blatchf. C. C. R., 295), there was an agreement that the employee should receive $500 for any patentable improvement he might make. In Whiting vs. Graves (1 Holmes, 222), it was held that an employment to invent machinery for use in a particular factory would operate as a license to the employer to use the machinery invented, but would not confer on the employer any legal title to the invention or to a patent for it. In Wilkens vs. Spafford (1 Holmes, 274), the contract was that the employer should have the exclusive benefit of the inventive faculties of the employee and of such inventions as he should make during the term of service. Whatever license resulted to the Missouri corporation from the facts of the case to use the invention was one confined to that corporation and not assignable by it. (Troy Iron and Nail Factory vs. Corning, 14 How., 193, 216; Oliver vs. Rumford Chemical Works, 109 U. S., 75, 82). The Missouri corporation was dissolved. Its stockholders organized a new corporation under the laws of Illinois, which may naturally have succeeded to the business of the prior corporation; but the express averment of the bill is that it took by assignment the rights it claims in this suit. Those rights, so far as any title to the invention or patent is concerned, never existed in the assignor. As to any implied license to the assignor, it could not pass to the assignee.

As to so much of the prayer of the bill as asks that Hewitt be enjoined from maintaining any action at law or in equity for any alleged infringement of the patent by the prior corporation, or for its use of any of the devices or improvements covered by the patent, which is all there is left of the prayer of the bill, any suit to be brought would not be a suit against the corporation, for it is dissolved, and could not be a suit in equity against its trustees, for they are not alleged to be using the invention. It could only be a suit at law against the trustees or the stockholders of the old corporation for infringement by it while it existed. The theory of the bill is that there is a perfect defense to such a suit. In such a case a court of equity, certainly a Circuit Court of the United States, will not interfere to enjoin even a pending suit at law, much less the bringing of one in the future. (*Grand Chute v. Winegar*, 15 Wall., 373; 1 high on injunctions, sections 80-93, and cases there cited.)

Decree affirmed.

It would be idle to discuss the question whether a decision of the United States Supreme Court is equitable or not, nor whether it squares with law. Such decisions make law and equity, and, being final, must be accepted as such. The matter is one well worthy the attention of employers, who will see the propriety of making specific contracts relative to patentable inventions with those they employ in confidential relations. If an employee, working in his employer's time, with his employer's materials and under his employer's specific direction, can, in the absence of a specific contract, claim an inventor's rights in all the improvements he may make in plant and processes, no man who will not waive the rights which the Supreme Court has recognized, is safe to have around. The Court does not seem to be quite clear that Hapgood & Co. had even a shop right in the results of Hewitt's work; but it is certain that if this right existed it was not one which could be assigned or transferred with the plant, good will and rights not in dispute. It may be assumed from this that a circuit court would scarcely feel justified in deciding that an employer had any rights under a patent obtained by an employee, whatever the circumstances of the case. Employers would do well to proceed upon this assumption and establish their rights by contracts with those they employ.

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At Pittsburgh, on the 18th inst., a meeting was held of freight agents of the railroads shipping westward from Pittsburgh, at which a new schedule of freight rates was adopted. Fifth-class rates, which include iron, steel, nails and window glass, will be as follows after the 1st of February: From Pittsburgh to Chicago, 17½ cents per 100 pounds; East St. Louis, 21 cents; Detroit, 14 cents; Cleveland, 10 cents; Cincinnati, 12 cents. The present rate to Chicago is 15 cents, so that the new rate will be an advance of 16⅔ per cent., or 56 cents per gross ton. This will increase the cost of Pittsburgh manufactures at Western points of consumption, but it was hardly to be expected that the railroad companies would not endeavor to secure their share of prosperity during the season of active business now prevailing.

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An important step was taken by the United States Senate in extending for seven years the reciprocity treaty now existing between this country and the Hawaiian Kingdom. Other rights are recognized by the treaty of an exclusive character, which in effect make the Islands a commercial dependency of the United States, as appears from an article which reads as follows: No export duty or charges shall be imposed in the Hawaiian Islands or in the United States upon any of the articles proposed to be admitted into the ports of the United States or the ports of the Hawaiian Islands free of duty under the first and second articles of this convention. It is agreed on the part of his Hawaiian Majesty that so long as this treaty shall remain in force he will not lease or otherwise dispose of or create any lien upon any port, harbor or other territory in his dominions, or grant any special privilege or rights of use therein to any other power, State or government, nor make any treaty by which any other nation shall obtain the same privileges relative to the admission of any article free of duty hereby secured to the United States. Not the least important phase of this treaty is an amendment just made which cedes to the United States Pearl River Harbor as a coaling and naval station. This harbor is 12 miles from Honolulu, and when deepened at the entrance will contrast favorably with the British station at Vancouver, as it is deep, capacious and easily defended. That the Hawaiian Government will cede to the United States this harbor for a naval station, as defined in the treaty, is open to grave doubts.

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The relative merits of compound and all-steel armor—a subject which has already brought out an almost endless amount of discussion and a series of costly experiments—are now but little nearer exact determination than they were a few years ago. While compound plates seem to be the more favored with many, advocates of solid steel shields also are not wanting, and there is little prospect that with the conflicting arguments now offered on both sides of the question a justly conclusive choice can soon be made. The results of the experiments which have been carried out during the past four or five years cannot be said to be particularly suggestive. Stegl, steel-faced and chilled cast-iron armor have all shared in the victories on record to a greater or less extent, and are accordingly entitled to some claims to distinction. Yet, on the whole, compound plates are at present given a preference which augurs well for their future. They are the form of plates which have been adopted by the admiralties of Great Britain, Russia and Germany, and also on the ships of Holland, Brazil, China and several other countries, and even France, where alone all-steel armor is yet produced, has of late favored them to a degree which is not without significance.

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The coal situation in New York becomes more desperate and must speedily reach a crisis. The coal handlers are now backed up by the Knights of Labor, and are disposed to concede nothing in their demands. So far from this, the boatmen engaged in transporting coal make common cause with the original complainants, and, in some instances, even the brakemen on railroads who were called upon to fill the place of strikers. Within a day or two a new phase of a grave character has arisen in the refusal of the laborers engaged in handling bituminous coal at South Amboy to continue their work, thus threatening the supplies for ocean steamers of the established Transatlantic lines. As the case stands, the alternative is presented of surrendering the trade of New York and the control of its manufacturing interests to a self-constituted authority not known to the law, or the vigorous enforcement of the law for the protection of person and property. The police officials are apprehensive of hot work ahead, as merchants and shippers already clamor for protection.

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Labor organizations throughout the West are electing delegates to the Industrial National Convention to be held at Cincinnati, February 22. The movement seems to be under the direction of the Knights of Labor, although Grangers, trade unions, Greenbackers and temperance organizations are invited to participate in sending delegates. An effort will doubtless be made to amalgamate the societies named into a political organization to act independently of the great political parties.

## The Holley Memorial.

*To the Editor of The Iron Age:* The legal limit of time which must elapse before a memorial to the late A. L. Holley can be erected in Central Park has nearly passed. It therefore appears proper that the committee should have a report to make in regard to the designs for the proposed monument. A considerable amount of money is in hand, and as one of the subscribers I wish to know something in regard to the steps taken toward procuring such a design and erecting the memorial.

Holley's genius was eminently versatile. His work was quick and direct. The cumberson he despised most heartily. He was a gatherer of facts as well as an inventor. To erect a pile of stone as a memorial of such a man would be absurd. The man of metal could best be honored by a memorial of metal; if a memorial in the concrete it really must be. To suppose that a work of art is likely to be produced is, I think, somewhat preposterous. Such work presupposes an art training on the part of those who select the design. Artists also must be available to make designs. In general, America has been peculiarly unfortunate in her monuments. She has numerous piles of granite, alleged to be for monumental purposes, but bearing a close and gastly resemblance to paper weights which must be oppressive to those who believe in the resurrection of the body. Let us at least have something different, even though we have to take one of those kerosene lamp bases usually sold as ready made monuments. The following suggestion is perhaps old, but if carried out it will have the merit of not being an art sin. It is this: A bronze bust of heroic size to be placed at a sufficient hight beneath a canopy which should be large enough to form a shelter for several seats or park benches. The canopy, its base supporting columns, base for the bust and the background against which the bust is to be seen, to be of structural iron, steel, ingots of steel, armor plate, boiler plate, axles, and, in fact, most of the more massive products of the Bessemer product. Pipes, welded and riveted work could also be used in the formation of the base, and the whole would be a trophy as well as a memorial. As most of the material would be donated there would be ample funds for coating the members with copper or bronze by electroplating and thus reserving the whole.

Of such a thing one writes with confidence, because the materials themselves form a trophy of no mean significance. To say the least, they belong to Holley's memory, and are therefore fit for the place. It is true they resemble an "exhibit," and this is not unfortunate. In the practical the American frequently rises even into art, and many an exhibit, arranged with only the mechanical and business thought, has been so beautiful as to attract the artist's attention. If it is absolutely needful to call in the purely decorative, we may screw on all over the members of the thing brass palm branches and copper laurel leaves, and thus spread "ourselves" on art, so called. Four full-sized steel ingots would form a most fitting base for Holley's bust, and if plated would be durable and as beautiful as any marble blocks. Poverty of invention, crudeness of ideas and a lack of art are so prone to be found in all the designs submitted to the committee that I would rather see the work placed in the hands of the engineer with orders to monumentally illustrate Holley's life in metal, without attempting to make an artistic monument, than allow the committee to fall into the hands of the artists.

An ordinary work in stone in Central Park will be looked at by the multitude with the vague wondering question "Who is that and what is the Bessemer process?" A trophy would rivet attention, instruct at the same time and arouse a desire to know more of such a man and his strange work. Whatever is done let us hear from the committee and know the worst at once.

A FRIEND OF HOLLEY.

## WASHINGTON NEWS.

(*From Our Regular Correspondent.*)

WASHINGTON, D. C., January 25, 1887.

The Republicans of the House having shown no disposition to encourage the repeal of internal taxes by a participation in the protection Democratic effort to go into Committee of the Whole on revenue measures, the friends of home industry and the tariff throughout the country have been circulating petitions which have been numerously signed, and are being received by Senators and Representatives asking their support of such a movement. The Republicans are masters of the situation, as no measure acceptable to either wing of the Democratic party can be passed without their co-operation. The cry therefore of danger in going into committee is purely imaginary and evasive. After getting into committee the Republicans would have it in their power to say whether the Morrison or any one of the five or six intervening on the Randall bill should be taken up. They are opposed to all bills for internal revenue repeal involving any tariff legislation whatever which would settle any of the bills now in committee. Republican participation in getting into committee would relieve them from responsibility for defeating at least the preliminary movements in the premises. Once in committee a proposition to simply repeal internal taxes would be most likely to receive sufficient Republican and Democratic support to pass it over the heads of the contending faction of the majority.

PETITIONS FOR REPEAL OF INTERNAL TAXES.

The following is the text of the petitions being sent here, which shows the reasons of the industrial interests for asking that the internal taxes may be reduced as rapidly as the condition of the Treasury will allow:

1. That internal taxation was resorted to by the General Government as a war measure, and should not be maintained during times of peace. A number of internal taxes which were impediments to commerce, or were petty exactions which annoyed and cost the people more than they benefited the revenue, were wisely repealed in 1883. 2. Others produce an enormous and unnecessary revenue, creating a surplus which endangers the economical administration of the Government. 3. The tax on tobacco is an exceptional burden upon agriculture. 4. The tax on spirits requires an army of detectives and another army of soldiers to prevent illicit distillation, and keeps portions of the country in a disturbed condition As spirits are largely used in the arts and in medicines, the tax on them is a real burden upon the people who use them for these purposes, or who consume the articles produced from them. Repeal of this tax would tend to do away with the injurious adulterations now extensively practiced. 5. The collection of internal taxes involves a supervision by the Government, which employs several thousand agents at a cost of millions of dollars annually.

TEXT OF TREASURY DECISIONS.

The Department of the Treasury has just promulgated the following decisions on customs cases under the tariff schedule for metals:

A duty of 45 per cent. having been assessed on certain imported rules, and the importers having claimed duty as manufacturers of wood, the Secretary of the Treasury decides that from an inspection of the samples the merchandise in question consists of folding rules composed of thin pieces of wood, each of about 6½ inches in length and ⅝ inch in width, which, by the use of steel pins and brass-bound joints, are made to extend 48 inches, and that the brass and steel used in their manufacture are prominent in value and important features in their construction, therefore dutiable at the higher rate as a manufacture in part of metal.

In response to a request for free admission of old car wheels of domestic manufacture, the Department, in denying the request, says: "If, as is presumed, these wheels are imported as scrap iron, unfit for use except to be broken up for re-manufacture, they are, under the existing rulings of the Department, not entitled to free entry as domestic manufactures *returned in the same condition as exported*, but are liable to the duty imposed by the statute on scrap-iron—viz., three-tenths of one cent. per pound."

On an appeal from duty of 45 per cent. on certain buckles the Department rules "that the merchandise in question consists of buckles manufactured of iron, covered with a coating of japan varnish; also of buckles manufactured of brass and iron, covered with a coating of lacquer, and others manufactured of brass only. These articles are not commercially known as 'plated or gilt ware,' nor as 'japanned ware,' as claimed by the appellants, and affirms the assessment of the higher rate."

On a claim of duty on so-called cutlery as "manufactures of metal," the Secretary affirms the 45 per cent. rate on the ground that "it appears that the merchandise in question consists of a variety of articles, such as spoons, forks, nut-picks, butter-knives; cake, pie and fish servers; crumb-scrapers, ladles, &c., made of German silver, and finished ready for plating, but which are not intended and cannot be used for cutting in any manner, like knives, and are in no sense cutlery. Therefore none of these articles can be considered as cutlery, but are manufactures of metal."

A duty of 10 per cent. having been levied on certain so-called "crude asphaltum," the Department has reversed the assessment, admitting the article free, stating the reason, that "it appears from the statement of the appellant that the asphaltum has been poured into a mold in its crude state for the purpose of shaping it into blocks. The Department holds that the merchandise in question is crude asphaltum, and that its being melted for the purpose of being shaped for convenience in transportation is not a process of refining, grinding or manufacture."

BILL TO LIMIT JURISDICTION IN PATENT CASES.

Representative Townshend has succeeded in getting up and securing a vote on his bill to limit the jurisdiction of United States courts in patent cases, and to protect persons who, without notice, are *bona fide* manufacturers, purchasers, venders, and users of articles, machines, machinery and other things for the exclusive use, manufacture or sale of which a patent has been or may hereafter be granted. The House made short work of this scheme to vitiate the whole patent system by a vote, yeas 81, nays 156. The emphasis of this antagonistic action will put an end to this agitation for some time to come.

NO DRAWBACK.

In reply to a letter of A. Roebling's Sons & Co., of New York, the Secretary of the Treasury has decided that a drawback of duties paid on imported materials cannot be allowed on articles manufactured in the United States from such material which may be sold to the Government.

CUSTOMS DECISION.

Certain roof-paste, consisting of a roofing fabric manufactured of asbestos and fine iron screen-wire, was held to be dutiable at the rate of 45 per cent. ad valorem, under the provision in Schedule C. T. I., new, 216, for "manufactures, articles or wares, * * composed wholly or in part of * * * metal."

INTERNATIONAL AND TARIFF REDUCTION.

A composite meeting of about 20 tariff and anti tariff Democrats has resulted in the formulation of a bill repealing the tax on tobacco and Weiss beer, and license tax on dealers in whisky. Lumber, goats' hair, fur used in making hats, jute and jute butts, salt and certain chemicals, are among the articles placed on the free list. The duty on steel rails is reduced to $13. The principal features of the Hewitt Customs Administrative Bill are incorporated in the new bill, together with some additions suggested by the Treasury Department. What is known as the "warehouse" section of the Hewitt bill, however, is eliminated. All items in the Randall bill increasing duties have been stricken out. The total reduction in customs duties will aggregate fully $10,000,000, and internal taxes about $40,000,000.

A COMMITTEE APPOINTED.

A committee of seven were appointed to confer with Speaker Carlisle, in order to arrange the parliamentary preliminaries of the movement should it be finally determined to make the attempt to go into Committe of the Whole. It was decided to hold another meeting on Thursday. The bill framed by the conference meets the approval of Mr. Randall, but is not likely to pass, as the Republicans will not touch it in its present form.

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**Classification of Iron Ore.**—Attorney-General Garland has given an opinion to the Secretary of the Treasury in regard to the classification of iron ore. He says the question as to whether iron ore dried at 212° F. is or is not the iron ore of commerce is a question of fact which he cannot be expected to determine. He summarizes his views on the points involved as follows: "1. In custom laws, as in all others, the intent of the law-makers is the law. 2. Where, in the expression of that intent, a name is used describing an article which has a well-established commercial signification should be adopted. 3. When the name is general and the tariff specific, it embraces the whole class and questions of price; value or accidental chemical components are immaterial. 4. The commercial signification of a name is that which those engaged in foreign and domestic sale, purchase and exchange generally adopt to describe the article. 5. If it be disputed what this commercial designation embraces, it is to be determined upon a clear preponderance of evidence. 6. The ordinary rules of evidence are to be applied with reference to interest, character and weight of testimony to be received from those engaged in or familiar with commerce, trade and traffic in the article. 7. Where a clear preponderance of evidence cannot be adduced, departmental construction, tacitly approved by Congressional recognition, should turn the scale and be accepted as sufficient evidence of the legislative intent."

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The Union Iron Works, of San Francisco, who are to build the cruiser Charleston, have ordered the shaft for that ship from Krupp, of Essen. The Messrs. Cramps will obtain the shafts for the three vessels they are to build from the great English steel-maker, Whitworth.

## MANUFACTURING.

### Iron and Steel.

The Laclede Rolling Mills, St. Louis, have been running full in all departments since restarting a month ago, with the exception of a few days when iron ran short, and a part of the puddling force had to be laid off. The supply of iron is sufficient now, however, for the operation of all of the 21 puddling furnaces, and the bar, guide, plate and sheet mills. These are running day and night.

The Duquesne Steel Company, Limited, who are erecting large works at Duquesne, near Pittsbugh, have concluded to have erected 50 blocks of two story brick tenements to be located centrally at a point near the works. Each block will contain two houses, five rooms to a house, making in all 100 houses. The plans and specifications are in the hands of contractors, and bids are being taken for construction. The works will be in full operation by March 1.

The old Wampum Furnace, at Wampum, Lawrence County, Pa., is being torn down. This furnace was erected in 1856, and has been idle since 1883. It is an immense stone affair, 45 feet at the base, 40 feet high and 40 feet across the top. Thousands of perches of the finest kind of building stone are contained in it, which will be shipped to Pittsburgh, and used in the new building of Reis, Lindsay & Co. now in course of erection there.

The Allentown Rolling Mill Company, of Allentown, Pa., are giving employment at present to about 700 hands, and the number will probably be increased to 1000 in a month or two.

The Warrior Coal, Iron and Land Company have been organized at Northport, Ala., with a capital stock of $500,000.

On January 19 a boiler in Swift's Iron and Rolling Mill, Newport, Ky., exploded with terrible force. The loss is estimated at $25,000.

A telegram from Nelsonville, Ohio, says that the Moxahala Furnace, on the Toledo and Ohio Central Railroad, has passed into the hands of Messrs. King, Gilbert & Warner, the well-known pig-iron commission firm of Columbus. This furnace was built in 1877, and has been lying out of blast for four years. It has a capacity of about 100 tons of pig iron daily. The purchasers will put it in blast immediately, giving employment to a large number of workmen.

At Dayton, Ohio, January 19, the shops of McHose & Lyon, founders and machinists, were destroyed by fire. Loss, $85,000; insurance, $25,000.

Jennings & Co.'s West Bergen Steel Works, in Jersey City, were destroyed by fire January 20, both of the wings being saved. The loss is estimated at about $15,000.

A large iron mill in which the "Pneumatic Process" will be put in operation will be built in Pittsburgh next spring. Dr. L. B. Chapin, of Chicago, was in the former city recently attending to the details of the contract concluded by his firm for the erection of the mill, which will be undertaken by a new company.

The Pottstown Iron Company, of Pottstown, Pa., which employ about 1400 men and boys, are reducing its working force, and have begun by discharging 100 Hungarians from the steel works.

Seaman, Sleeth & Black, proprietors of the Phœnix Roll Works at Pittsburgh, turned out a large roll last week. It was 46 inches in diameter, and weighed 30 tons. It is said that this is the largest roll ever cast in the United States, and that there is only one larger in the world, the difference in diameter being but half an inch. A large number of spectators witnessed the casting.

A correspondent of the Pittsburgh *Commercial Gazette*, writing from Sharon, Pa., says: "Sharon and Sharpsville are producing more crude and finished iron to-day than for years past. There is not an idle mill or furnace in this vicinity, and the proprietors find great difficulty in filling orders, so fast are the latter pouring in. The Sharon Iron Company's furnace, the Stewart Iron Company's furnaces, the Kimberly Furnace, and the 11 furnaces at Sharpsville are in steady operation. Preparations are now going on for the new steel mill to be erected south of town. A new chain factory is in course of completion."

The large supply buildings of the Onondaga Iron Company's blast furnace, at Geddes, N. Y., were destroyed by fire on the night of the 19th inst. Estimated loss $75,000, partially covered by insurance.

Milton Furnace, of the Milton Furnace and Coal Company, at Wellston, Jackson County, Ohio, which has been out of blast for some time making repairs, blew in again last week.

The old Glendower rolling mill, at Danville, Pa., has been purchased by the Mahoning Rolling Mill Company, a new organization, of which Mr. Abraham S Patterson, of Philadelphia, is president, and Mr. T. P. Howe, of Danville, is treasurer. The works now have five double and nine single puddling furnaces, four heating furnaces and two muck trains and one roughing train of rolls, one 16-inch, one 13-inch and one 10-inch finishing train. The product of the mill is finished skelp iron, of which it is capable of turning out 15,000 tons annually. The office is at No. 330 Walnut street, Philadelphia.

The Andover Iron Company, at Phillipsburg, N. J., have built an iron shell and column furnace, 75 x 17 feet, of 650 tons weekly capacity, in place of its old No. 1 furnace.

The North Branch Steel Company, of Danville, Pa., have contracted with J. P. Witherow, of Pittsburgh, for the erection of a steel works with a capacity of 300 or 400 tons a day. It will consist of two 4-ton Bessemer converters with a large blooming mill, soaking pits and shears for the largest-sized blooms and slabs. The product will be manufactured into street rails, for which the company already have orders to run the mill eight or ten months.

Summers, Margerum & Co. is the name of the firm which has purchased and will operate the Old Ward mill in Niles, Ohio.

The McCormick Company has been incorporated at Harrisburg, Pa., with a capital of $1,000,000 for the purpose of manufacturing iron and steel. The directors are Henry and James McCormick, J. D. Cameron, Henry McCormick, Jr., and James M. Cameron.

On the 17th inst. the employees of the Montreal Rolling Mills and the iron foundries of Messrs. Peck & Benny and Pillow & Hersey, in Montreal, went out on a strike. The hands in the nail works connected with the mills were informed that wages would be reduced 10 per cent. After a short conference the hands decided to go out. The total number of persons involved in the strike is about 1100, 1000 of whom belong to the Knights of Labor.

At the annual meeting of the stockholders of the Cleveland Rolling Mill Company, the following directors were re-elected: William Chisholm, J. H. Wade, H. B. Payne, W. B. Chisholm, and J. H. Wade, Jr. At the directors' meeting, which was held later, William Chisholm, president; W. B. Chisholm, vice-president, and Edward S. Page, secretary, were also re-elected.

At the meeting of the stockholders of the Republic Iron Company, directors were elected as follows: David Morgan, Charles Hickox, J. V. Painter, Charles G. Hickox, Henry B. Perkins, George W. R. Matteson, Samuel P. Ely, Joseph Perkins, and W. D. Rees. The officers elected are: David Morgan, president; Charles Hickox, vice-president; and W. D. Rees, secretary and treasurer.

The Virginia Nail and Iron Company, of Lynchburg, Va., have paid a dividend of 5 per cent. on last year's business.

Two Lebanon, Pa., firms have carried off contracts for navy supplies. The one is to Messrs. Pott & Co., for 200 ballast balls, and the other is to the West Lebanon Rolling Mill Company, Limited, for 35 tons of the heaviest chains, to be used in the lighthouse service.

The furnacemen and laborers, to the number of 75, employed at the Pequest Blast Furnaces, struck for an increase of pay. This furnace is owned and operated by Cooper, Hewitt & Co., of New York. The men quit work without giving a minute's notice. They made a demand on Superintendent John S. Fackenthal, who informed them that they would not receive the advance.

For several weeks negotiations have been pending between the Union Bridge Company, of Buffalo, and the Elmira Iron and Steel Rolling Mill Company, for the purchase of the plant of the latter, except Jay Gould's one-third interest. On the 22d arrangements were completed. The price to be paid has been stated at various sums from $1,500,000 to $2,000,000. The trade is understood to include the Elmira mills and blast furnaces, lands, iron-ore mines, railway tracks, switches, franchises, &c. It has also been stated that the Athens, Pa., Bridge Works will be removed to Elmira.

Muirkirk Furnace (charcoal), at Muirkirk, Prince George's County, Md., went into blast on Thursday, the 20th inst., and is working very well.

The 44 puddlers and helpers of the Maidencreek Iron Company, at Blandon, Pa., have struck against an order prohibiting them from using "scale" in puddling.

The Milwaukee Furnace Company have been incorporated by Messrs. Charles Himrod, Jesse Holdom and Willis Smith, with a capital of $45,000, for the purpose of operating the Minerva Furnace, at Milwaukee, Wis. The furnace will be blown in, probably on Bessemer pig iron, some time in April. The Chicago office of the Company will be located with Charles Himrod & Co., 115 Dearborn street.

The employees of the pipe mill of the Reading Iron Works, at Reading, were some time since granted an increase of wages, but it was not satisfactory, and a strike which would affect 800 men was threatened. This, however, has been averted by the granting of another increase in wages, and the man now express themselves as satisfied.

### Machinery.

At the annual meeting of the Mechanics Machine Company, of Warren, R. I., the directors were authorized to sell or lease the property. It was deemed wise to dispose of it as soon as possible without too great sacrifice.

The Crystal Emery Wheel Company, of Northampton, Mass., have recently shipped two large emery-wheels, 30 inches in diameter and 4 inches in thickness, to the J. L. Mott Iron Works, of Mott Haven, N. Y. Other shipments will follow.

The York Mining Machine Company, of Bellville, Ill., have been incorporated with a capital stock of $30,000.

The Humphrys Mfg. Company, of Mansfield, Ohio, have purchased the entire business, accounts and manufacturing outfit of L. F. Robinson & Co., of Medina, N. Y., and as soon as the weather will permit will build an extensive addition to their works at Mansfield for the manufacture of soil pipe and fittings, and other plumbers' ironware. Mr. L. F. Robinson will go to Mansfield to superintend the manufacture of these goods.

E. W. Tucker, representing the firm of E. P. Allis & Co., machinery builders, of Milwaukee, Wis., was in Pittsburgh last week, and while there made final arrangements for the closing of contracts for some of the largest and most expensive stationary engines that have been ordered by Pittsburgh firms for a number of years. Among the contracts signed were five with the firm of Carnegie, Bros. & Co., and they are to be placed in the new mill at the Bessemer Steel Works in Braddock. Of these engines two are to be of 1500 horse-power, two of 600 and one of 700 horse-power. In addition to these, Mr. Tucker secured contracts for two powerful engines for the Homestead Steel Works, and for several smaller engines for other firms in Pittsburgh and vicinity. The total amount involved in all these contracts is nearly $100,000.

The Baldwin Locomotive Works, of Philadelphia, have just completed two large locomotives for the Cascade division of the Northern Pacific Railroad, where the grade is 300 feet to the mile. These monsters weigh over 200,000 pounds each, and are known as the decapod, having 10 driving wheels each. The works are also building six locomotives for use in Brazil, besides filling orders for the Jacksonville, Tampa and Key West Railroad, the Norfolk and Western, the Richmond and Danville and the Atlantic Coast Line Railroads.

One branch of the Scott Foundry of the Reading Iron Works, at Reading, Pa., is kept busy turning out Rankin's improved ice machines. A machine of 25 tons' daily capacity is now being built for shipment to Kansas City, Mo.

Heaters manufactured by the Standard Car-Heating and Ventilating Company, of Allegheny, are being tried on the Pennsylvania Railroad. They consist of small steam-generating furnaces located underneath the cars.

Beaman & Smith, a new firm, occupy a building recently erected corner Harrison and Westfield streets, Providence, R. I. They will build machinery of all kinds, paying particular attention to designing special machines. Mr. Beaman was formerly with the Star Tool Company, and Mr. Smith was chief draughtsman for Browne & Sharp Mfg. Company.

The Elyton Land Company, of Birmingham, Ala., have just purchased for their water-works, one of the argest pumps ever brought to the South. It has a capacity of 7,000,000 gallons of water every 24 hours, and is manufactured by the Deane Steam Pump Company, of Holyoke, Mass. The pump is to be completed and delivered here early in the spring, and will be put up at once. The same company sold the Gadsden (Ala.) Works two 200,000 gallons, and the Montgomery (Ala.) Works two 500,000 gallons' capacity, which are now in operation, giving unbounded satisfaction. They will, during the coming season, place a number of their pumps at various cities in the South,

The South Western Iron Works were incorporated on January 1, in Louisville, Ky., for the menufacture of cast-pipe and fittings, and general plumbers' and machinists' supplies. They have bought a lot, and erected commodious buildings, including foundry and machine shops, on corner Arbegust and Sixteenth streets. The building is of corrugated iron and practically fire-proof. The incorporators are A. Bell, of Chicago, president; John Speichert, of Milwaukee, and Ahrens & Ott of this city, with T. Ahrens, secretary and treasurer.

The Walker Mfg. Company, of Cleveland, Ohio, report large sales of their new tool holder.

Aikin & Lighton, of Birmingham, Ala, will begin work on their new foundry and machine shop as soon as the material can be gotten on the ground. The dimensions are: Foundry, 50 x 135 feet; machine shop, 50 x 80 feet, two stories; blacksmith shop, 30 x 50 feet. The building will be of brick. New machinery of the latest and most approved patterns will be put in.

The Wainwright Mfg. Company, of Boston and New York, furnish us the following figures, showing the increase in sales of their feed-water heaters: From November, 1885, to May, 1886, six months, 997 horse-power sold; from May, 1886, to September, 1886, four months, 3893 horse power sold; from September, 1886, to January, 1887, four months, 4462 horse-power sold.

### Hardware.

Sheldon Axle Company have removed from Auburn, N. Y., to Wilkesbarre, Pa., and are now located in their new works, having made the entire transfer of their machinery and business. They advise us that they are getting well organized, and expect to be running to their full capacity very soon. They refer to their new plant and location as being exceedingly satisfactory, and putting them in a position to carry out fully the assurances they have given to the trade.

The Cleveland Axle Mfg. Company, Cleveland, Ohio, beside their domestic trade, are sending their manufactures out of the country, Australia being mentioned as one of the markets where they are meeting with much favor. Their line includes medium and fine grades Buggy and Carriage Axles, which are referred to as of superior finish, and also the well-known Hard Box and Hard Spindle Steel Solid Collar Concord Axles for wagon and truck work, of which they are the original makers.

Rundle, Spence & Co., Milwaukee, Wis., manufacturers of brass, iron, copper and malleable goods for plumbers, steam and gas fitters, are putting in a cupola on the fifth story, and are getting ready to commence the manufacture of wire goods early in the coming spring. They report that they are running full time and full force, and are well supplied with orders.

The Henry C. Hart Mfg. Company, Detroit, Mich., call special attention to their line of screen goods as being popular with the trade and selling freely for spring delivery. They allude especially to their Champion hold-back spring hinge as meeting with increased favor, and they are anticipating for it an extensive sale during the present year.

The employees of the National Tube Works Company, at McKeesport, Pa., have made a demand for an increase of wages varying from 5 to 25 per cent. It is thought the demand will be granted.

The Thurston Mfg. Company, Providence, R. I., are manufacturing Lee's patent stop chamfer and anchor molding plane, which was formerly made by the Griffan Tool Company. They call attention to its workmanship and material, as well as to the special features of the tool.

The Oriskany Malleable Iron Company, Oriskany, N. Y., are about completing their new works, which they expect to occupy about February 15. With the increased facilities which they will thus possess, they expect to double their present output, and allude to their works as having the latest improved melting and annealing appliances, so that they will be in a position to turn out first-class refined malleable iron castings, suitable for agricultural, wagon and other purposes, where the heavier class of malleables are required.

The new nail factory recently incorporated at Belleville, Ill., propose to manufacture wire nails exclusively, with a new machine invented by George Gray.

### Miscellaneous.

It is stated that the officials of the Atchison, Topeka and Santa Fé Railroad have recently let contracts for the construction of 4800 freight cars for use on the Chicago division, and will soon let further contracts for an additional 5000 freight cars. The company have placed orders for the building of 148 locomotives, and besides has bought a dozen outright. Contracts have also been made with the Pullman Company for the construction of 80 passenger and sleeping cars.

The following record of the pumping works in Chicago will show the daily consumption of water by the citizens of that city during the year 1886. The report of the engineer shows the daily average consumption of gallons for each month: January, 99,527,198; February, 100,155,728; March, 95,420,946; April, 89,621,972; May, 91,024,935; June, 102,043,025; July, 102,865,118; August, 102,010,793; September, 101,068,357; October, 97,551,025; November, 92,093,891; December, 100,107,512. The daily average for the year was 97,789,646. When the additional engines are in working order there will be an additional capacity of 24,000,000 gallons daily.—Chicago *Industrial World*.

As announced in these columns last week, the Standard Plate Glass Company, of Butler, Pa., will shortly commence operations. As previously announced, the company have applied for a charter of incorporation. The capital stock is $500,000, the largest portion of which is held by Pittsburgh capitalists. The company have a large tract of land on which they propose to drill a number of gas wells. The plant, it is said, will cost at least $300,000. When completed, the works will give employment to about 200 men.

The People's Gas Company, of Butler, Pa., have been organized with a capital stock of $100,000. The company will supply gas principally to the residents of Butler, Pa.

The Summit Stove Company, of Akron, Ohio, capital stock $20,000, have been incorporated.

George A. Ohl & Co., Newark, N. J., manufacturers of sheet metal workers' machinery, issue circulars describing their different machines, on some of which they have recently made improvements. They allude to their machines as covered by patents and sold with a guarantee to their customers of protection from loss or damage arising from claims of infringements.

The Altoona (Pa) shops of the Pennsylvania Railroad Company have been making a freight car every working day for the past two months, so great has been the demand for equipment.

The Walter A. Wood Mowing and Reaping Machine Company, Hoosick Falls, N. Y., have gradually extended their works until the shops, warehouses, yards and offices occupy over 80 acres of ground interlaced with railroad tracks. The shops contain many mechanical novelties, among them powerful hydraulic pressure dies of the company's own devising for trueing up mallefied ironwork, and the Williams, White & Co. bending machine for forming steel and wrought-iron parts by a single movement. All departments are equipped with the best machinery obtainable for insuring the uniformity and interchangeability desired where machines of a given pattern are turned out in large quantities. The company is sole maker of all the machines it manufactures. The sales of the Walter A. Wood machines for 1886 are reported in their last catalogue as exceeding those of the previous year. The statement of the production and sale of these machines for the past 34 years is interesting, starting with 500 in 1853, and reaching by a gradual and almost uninterrupted yearly increase 45,557 in 1886, making a total in the 34 years of 620,609. Nearly half of this number were turned out within this decade. Some 2000 hands are employed in these works, whice stand prominent among American industrial establishments. Mr. Wood's skill as a mechanic and his persistent enterprise in this chosen line are to be noted in connection with this remarkable success.

The shot tower of the Gulf Shot and Lead Company, in New Orleans, was destroyed by fire, 23d inst. The tower was 205 feet high, and was in active operation. Some 12,000 bags of manufactured shot were on hand. The loss is estimated at $40,000, upon which there was $15,000 insurance. The fire, it is understood, was caused by electric light wires in the tower.

Rumors from Cleveland stating that the Baldwin Locomotive Works are arranging to move to that city from Philadelphia are denied.

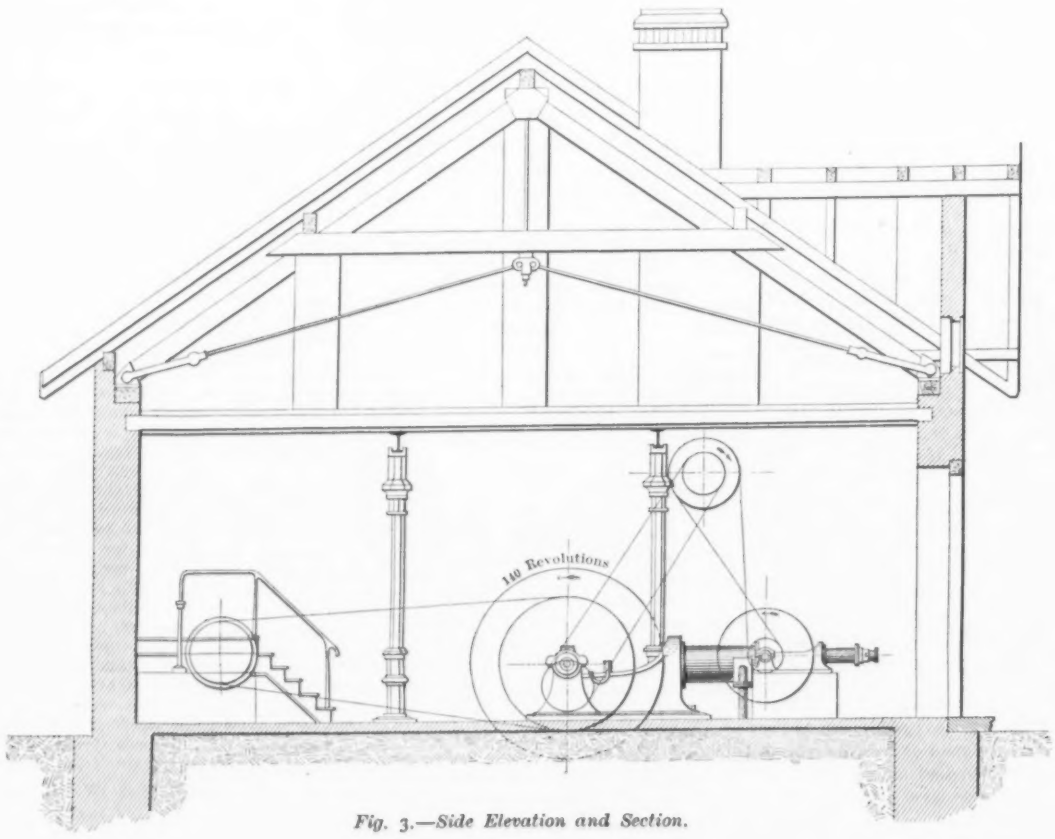


*Fig. 3.—Side Elevation and Section.*

(For Description, see page 1.)

LARGE OTTO GAS ENGINES AT PRAGUE, AUSTRIA

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**Grate Bars.**
- Traud A., Newark, N. J ... 40

**Grindstones.**
- Cleveland Stone Co., Cleveland, O ... 33
- Lake Huron Stone Co., Detroit and Chicago ... 33
- A. F. Pike Mfg Co, Pike Station, N. H.. 33
- Wood, Walter R., 283 and 285 Front, N. Y. 33

**Gunpowder,** *Makers of.*
- Laflin & Rand Powder Co., 29 Murray, N. Y. 33

**Hammers.**
- Buffalo Hammer Co., Buffalo, N. Y ... 9

**Hammers, Steam.**
- Bradley & Co., Syracuse, N. Y ... 44

**Hand Force Pumps.**
- Union Mfg. Co., 103 Chambers, N. Y ... 7

**Handles.**
- Cabot Company, Chicopee, Mass ... 9

**Hardware Comm'n Merchants.**
- Field Alfred & Co., 93 Chambers, N. Y.. 10

**Hardware Manufacturers.**
- Bingham W. & Co., Cleveland, Ohio ... 10
- Enterprise Mfg. Co., Philadelphia ... 38
- Herrmann-Parker Hdw. Co., St. Louis, Mo. 30
- Union Mfg. Co., 103 Chambers, N. Y ... 7

**Hardware Mfrs.' Agents.**
- Jacobus W. H. & Co., 90 Chambers, N. Y. 34

**Hardware Shelf Boxes.**
- Green S. H., 22 Park Place, N. Y ... 28
- Jones Jesse & Co., Philadelphia, Pa ... 32

**Hardware Specialties.**
- Acme Shear Co., Bridgeport, Conn ... 33
- Bingham W. & Co., Cleveland, Ohio ... 10
- Rex A. C. & Co., Philadelphia, Pa ... 13
- Saxton & Osgood, Buffalo, N. Y ... 44
- Shepard Hardware Co., Buffalo, N. Y ... 44
- The Wire Goods Co., Worcester, Mass ... 2
- Underhill, Clinch & Co., 91 Chambers N. Y. 10
- Union Hdw. Co., Torrington, Conn ... 23

**Hardware, Theatrical.**
- Clancy J. R., Syracuse, N. Y ... 32
- Martin Samuel, 127 Eighth av., N. Y ... 13
- Wollensak J. F., Chicago, Ill ... 34

**Harness Snaps.**
- Beecher F. H., Seymour, Conn ... 33
- Covert Mfg. Co., West Troy, N. Y ... 37

**Hay Carriers.**
- Myers F. E. & Bro., Ashland, O ... 7

**Hay Knives.**
- Hiram Holt & Co., East Wilton, Me ... 8
- North Wayne Tool Co., Hallowell, Me ... 8

**Hinges.**
- Union Mfg. Co., 103 Chambers, N. Y ... 7

**Hog Ringers.**
- Chambers, Bering & Quinlan Co., Decatur 4

**Hoisting Machines.**
- Box Alfred & Co., 314 Green, Phila ... 41
- Harrington E., Son & Co., Philadelphia.. 43
- Lidgerwood Mfg. Co., 96 Liberty, N. Y.. 37
- Morse, Williams & Co., Philadelphia, Pa. 43
- Sellers Wm. & Co., Philadelphia, and 79 Liberty st., N. Y ... 43
- Teal Hoist Co., Philadelphia ... 13

**Hooks (Cotton & Bale).**
- New York Handle & Mallet Works, 456 E. Houston, N. Y ... 13

**Horse Nails.** *Makers of.*
- National Horse Nail Co. Vergennes, Vt.. 30

**Horse Shoes.** *Makers of.*
- Rhode Island Horse Shoe Co., Providence. 4
- The Burden Iron Co., Troy, N. Y ... 4

**Hot-Blast Stoves.**
- Witherow James P., Pittsburgh, Pa ... 4

**Hydrants, &c.**
- McLean John, 296 & 298 Monroe, N. Y ... 36

**Hydraulic Jacks.**
- Dudgeon Richard, 24 Columbia, N. Y ... 41
- McCoy & Sanders, 26 Warren, N. Y ... 40
- Watson & Stillman, 204 E. 43d, N. Y ... 43

**Hydraulic Motors.**
- Amherst Hydraulic Motor Co., Holyoke, Mass ... 28

**Ice Cream Freezers.**
- Gooch Freezer Co., Cincinnati, O ... 32

**Ice Creepers.**
- Diebel Mfg. Co., Philadelphia ... 6

**Injectors.**
- Jenkins Bros., 71 John, N. Y ... 44
- Sellers, Wm. & Co., Philadelphia, Pa ... 43

**Insurance, Boiler.**
- Hartford Steam Boiler Inspection & Insurance Co ... 40

**Iron,** *Manufacturers' Agents.*
- Cox Justice, Jr., & Co., 333 Walnut, Phil.. 5
- Hicks & Dickey, Philadelphia, Pa ... 4
- Hoffman J. W. & Co., 208 S. 4th, Phila ... 5
- Levis Henry & Co., Philadelphia, Pa ... 5

**Iron,** *Manufacturers of.*
- Alan Wood Co., Philadelphia ... 5
- Burden Iron Co., Troy, N. Y ... 4
- Leonard John, 451 West st., N. Y ... 4
- Moorhead & Co., Pittsburgh, Pa ... 6
- Montour Iron & Steel Co., Danville, Pa ... 36
- Phoenix Iron Co., 410 Walnut, Phila ... 5
- Plymouth Rolling Mill Co., Conshohocken, Pa ... 5
- Pottsville Iron & Steel Co., Pottsville, Pa. 30
- Riverside Iron Works, Wheeling, W. Va. 8
- The Passaic Rolling Mill Co., Paterson ... 4
- The Wilmot & Hobbs Mfg. Co., Bridgeport. 6
- Troy Steel and Iron Co., Troy, N. Y ... 36
- Whitney A. R. & Co., 58 Hudson, N. Y ... 4

**Iron and Steel, Swedish.**
- Lewander & Co., Boston, Mass ... 37

**Iron Brokers.**
- Etting Edward J., Philadelphia, Pa ... 5
- Fox John, 160 Broadway, N. Y ... 4
- Logan James H., Pittsburgh ... 36
- Walbaum W. H., Philadelphia, Pa ... 5

**Iron Commission Merchants.**
- Hart Wm. R. & Co., Philadelphia, Pa ... 5
- John L. Hogan, Philadelphia, Pa ... 5
- Lea J. Tatnall & Co., Philadelphia ... 5
- Lundberg Gustaf, Boston, Mass ... 37
- Mohr J. J., 430 Walnut, Philadelphia ... 5
- Tyler Bros., Boston, Mass ... 2
- Wister L. & R. & Co. Philadelphia, Pa ... 5

**Iron Dealers.**
- Abeel Brothers, 190 South, N. Y ... 4
- Abbott Jere & Co., N. Y. and Boston ... 3
- Bonnell, Botsford & Co., Youngstown ... 4
- Borden & Lovell, 70 and 71 West, N. Y ... 4
- Cooney Daniel F., 88 Washington, N. Y ... 4
- Cox Justice, Jr., & Co., Philadelphia ... 5
- Eaherick & Co., Philadelphia, Pa ... 5
- Hart, Wm. R. & Co., Philadelphia ... 5
- Himrod Chas. & Co., Chicago, Ill ... 4
- Hoffman J. W. & Co., 208 S. Fourth, Phil. 5
- Judson B. F., 457 and 459 Water, N. Y ... 4
- Keeley Jerome & Co., Philadelphia, Pa ... 5
- Lindsay & Parvin, Philadelphia ... 5
- Lundberg Gustaf, 38 Kilby, Boston ... 37
- Lundell Chas. G., Boston, Mass ... 37
- Naylor & Co., 99 John, N. Y ... 36
- Ogden & Wallace, 85 to 91 Elm, N. Y ... 4
- Pierson & Co., 24 to 27 West, N. Y ... 4
- Pullman J. Wesley, Philadelphia ... 5
- Wallace Wm. H. & Co., Albany & Washington streets, N. Y ... 4
- Wilson E. H. & Co., Philadelphia, Pa ... 5
- Whitney A. R. & Co., 17 Broadway, N. Y. 4

**Iron Pig,** *Importers of*
- Abbott Jere & Co. (Swedish), New York & Boston ... 37
- Page, Newell & Co., Boston, Mass ... 37
- Williamson James & Co., 63 Wall, N. Y ... 4

**Iron Planers.**
- Tower & Lyon, 95 Chambers, N. Y ... 38

**Iron Sheet,** *Manufacturers of*
- Everson, Hammond & Co., Pittsburgh, Pa 4
- Lefferts, Marshall & Co., 90 Beekman, N. Y 4
- Standard Iron Co., Bridgeport, O ... 36
- W. D. Wood & Co., Limited, Pittsburgh ... 4

**Iron, Steel and Nails.**
- Morris, Wheeler & Co., 14 Cliff, N. Y ... 5

**Ironwork, Ornamental.**
- Champion Iron Fence Co., Kenton, O ... 34

**Knife-Polishing Machines.**
- Francis T. Witte Hdw. Co., 106 Chambers, N. Y ... 13

**Kegs.**
- Draper & Boyer, Oswego, Kan ... 34
- National Keg Works, Birmingham, Ct.. 32

**Keys.**
- Wollensak, J. T., Chicago, Ill ... 35

**Lamp Stoves.**
- The Alford & Berkele Co., 77 Chambers, N. Y ... 28

**Lathes.**
- Harrington, E. & Son, Philadelphia ... 43
- Millers Falls Co., 74 Chambers, N. Y ... 30
- Prybil P., 467 W. 40th, N. Y ... 40
- Sebastian, May & Co., Cincinnati, O ... 13

**Lawn Mowers.**
- Blair Mfg. Co., Springfield, Mass ... 38
- Chadborne & Coldwell Mfg. Co., Newburg, N. Y ... 38
- Dille & McGuire Mfg. Co., Richmond, Ind. 26
- Mast, Foos & Co., Springfield, O ... 38

**Lemon Drills.**
- Moulton W. F., Burlington, Vt ... 4

**Levels.**
- Richardson C. F., Athol, Mass ... 6

**Locks and Knobs,** *Manufacturers of.*
- Dietz A. E., 97 Chambers, N. Y ... 30
- Manhattan Hdw. Co, Reading, Pa ... 34
- Smith & Egge Mfg. Co., Bridgeport ... 34
- J. E. Quackenbush & Sons, 535 Eighth av., N. Y ... 38
- The Charles Parker Co., Meriden ... 34
- Yale & Towne Mfg. Co., Stamford, Conn. 11

**Lubricators.**
- Reliance Gauge Co., Cleveland, O ... 9

**Machinery.**
- Adt John & Son, New Haven, Conn ... 41
- Barnes W. F. & John, Rockford, Ill ... 42
- Garvin E. E. & Co., 139 Centre, N. Y ... 42
- Harrington E & Son, Philadelphia ... 43
- Hendy Machine Co. Torrington, Conn ... 41
- Lodge, Davis & Co., Cincinnati, O ... 43
- Pittsburgh Mfg. Co., Pittsburgh, Pa ... 41
- Sellers Wm. & Co., Philadelphia, and 79 Liberty, N. Y ... 43
- Southwark Foundry and Machine Co., Philadelphia, Pa ... 43
- Stokes & Parrish Machine Co., Philadelphia, Pa ... 42
- Stow Flexible Shaft Co., Ld., Phila ... 43
- The Stiles & Parker Press Co., Middletown, Conn ... 44
- Union Foundry & Pullman Car Wheel Works, Chicago, Ill ... 13
- Waterbury Farrel Foundry and Machine Co., Waterbury, Conn ... 40
- Wetherill Robert & Co., Chester, Pa ... 43

**Machinists' Scales.**
- Coffin & Leighton, Syracuse, N. Y ... 13

**Machinists' Tools and Supplies.**
- Blaisdell P. & Co., Worcester, Mass ... 41
- Harrington E., Son & Co., Philadelphia, Pa ... 43
- King J. M. & Co., Waterford, N. Y ... 8
- N. Y. Supply Co, 50 & 52 John, N. Y ... 43
- Sellers Wm. & Co., Philadelphia, and 79 Liberty, N. Y ... 43

**Mallets.**
- N. Y. Handle & Mallet Works, 456 E. Houston ... 13

**Mangers.**
- E. C. Stearns & Co., Syracuse, N. Y ... 44

**Measuring Faucets.**
- Lane Bros., Poughkeepsie, N. Y ... 38

**Metallic Paint.**
- Rutherford & Barclay ... 39

**Metals.**
- Dickerson, Van Dusen & Co., 29 and 31 Cliff, N. Y ... 2
- Fearing Wm. S., 100 Chambers, N. Y ... 26
- Naylor & Co., 99 John, N. Y ... 36
- Phelps, Dodge & Co., Cliff st., N. Y ... 2

**Metallurgists.**
- Booth, Garrett & Blair, 919 Chant, Phila.. 5
- Britton J. Blodgett, 330 Walnut, Phila ... 36

**Mills, Bone Grinding.**
- Wilson Bros., Easton, Pa ... 37

**Mine Lamps.**
- Hunt & Connell, Scranton, Pa ... 6
- Leonard Bros., Scranton ... 6

**Molding Sand.**
- Paxson J. W. & Co., 514 Beach, Phila ... 5

**Mouse Traps.**
- Lovell Mfg. Co., Erie, Pa ... 37
- Ripley Mfg. Co., Unionville, Conn ... 32
- The F. F. Adams Co., Erie, Pa ... 34

**Nail Machinery.**
- Birmingham Iron Foundry, Birmingham, Conn ... 8
- Pittsburgh Mfg. Co., Pittsburgh, Pa ... 41

**Nail Sets.**
- The Edward Storm Spring Co., Poughkeepsie, N. Y ... 40

**Nails.**
- Borden & Lovell, 70 West, N. Y ... 4
- E. & G. Brooke Iron Co., Birdsboro ... 7
- Cumberland Nail & Iron Co, Phila ... 5
- Fuller Bros. & Co., 139 Greenwich, N. Y.. 4
- Oxford Iron Co., 81 Washington, N. Y ... 4
- Riverside Iron Works, Wheeling, W. Va. 8
- Stebbins C. J., 111 Reade, N. Y ... 4
- Virginia Nail and Iron Works Co., Lynchburg, Va ... 31

**Nails, Cut.**
- Blankenship R. E., Richmond, Va ... 7
- Borden & Lovell, 70 West, N. Y ... 4

**Nickel Platers' Supplies.**
- The Zucker & Levett Chemical Co., 540 to 544 West 16th, N. Y ... 25

**Norway Shapes,** *Rollers of.*
- Naylor & Co., 99, John, N. Y ... 36
- Rowland William & Harvey, Frankford, Philadelphia ... 44

**Nuts, Bolts, &c.,** *Makers of.*
- American Bolt Co., Lowell, Mass ... 42
- Columbus Bolt Works, Columbus, O ... 28
- Port Chester Bolt and Nut Co., Port Chester, N. Y ... 39
- The Allentown Rolling Mills, Allentown. 5
- Wm. H. Haskell Co., Pawtucket, R. I ... 41
- Russell, Burdsall & Ward, Port Chester.. 44
- Wilson J. Fred., Worcester, Mass ... 39

**Oilers.**
- Hero Fruit Jar Co., Philadelphia, Pa ... 31

**Oil Stones.**
- A. F. Pike Mfg. Co., Pike Station, N. H.. 33
- Chase Geo. 107th & Harlem River, N. Y.. 33

**Oil Stoves.**
- Florence Machine Co., Florence, Mass ... 30

**Ore Jigs.**
- MacLanahan & Stone, Hollidaysburg, Pa. 30

**Ox Shoes.**
- Woodruff, Miller & Co., Mount Carmel, Conn ... 34

**Packing.**
- Chalmers-Spence Co., 419 Eighth, N. Y ... 9
- Jenkins Bros., 71 John, N. Y ... 44
- N. Y. Belting and Packing Co., 13 and 15 Park Row, N. Y ... 13

**Padlocks.**
- Penn Lock Works, Philadelphia ... 33

**Paper Pails.**
- Brower John, 81 Murray, N. Y ... 4

**Patent Solicitors.**
- Bromhead S. S., London, England ... 30
- Howson & Son, Phila. and Washington ... 11
- Stetson Thos. D., 23 Murray, N. Y ... 31
- Stocking E. B., Washington, D. C ... 2

**Phosphor Bronze.**
- Phosphor Bronze Smelting Co., Limited, 512 Arch, Philadelphia ... 3

**Pig Iron.**
- Condit, Fuller & Co., Cleveland, Ohio ... 4
- Hart Wm. R. & Co., Philadelphia, Pa ... 5
- Montour Iron and Steel Co., Reading, Pa. 36

**Pipe Cutters.**
- Pancoast & Maule, Philadelphia ... 42

**Pipes, Fittings, &c.,** *Makers of.*
- McNab & Harlin Mfg. Co., 56 John, N. Y.. 41

**Pipe, Water and Gas,** *Makers of.*
- Fox John, 160 Broadway, N. Y ... 4
- Reading Iron Works, Philadelphia, Pa ... 6
- Sayre Pipe Foundry, Sayre, Pa ... 10
- Wood R. D. & Co., 400 Chestnut, Phila ... 4
- Wyckoff A. & Son, Elmira, N. Y ... 32

**Plane Irons,** *Manufacturers of.*
- Buck Bros., Millbury, Mass ... 13

**Planes,** *Manufacturers of.*
- Birmingham Plane Mfg. Co., Birmingham, Conn ... 34
- Stanley Rule & Level Co., 29 Chambers, N. Y ... 9

**Plated Ware.**
- Hall, Elton & Co., 47 E. 13th, N. Y ... 11
- The Rogers & Hamilton Co., Waterbury, Conn ... 9
- Simpson, Hall, Miller & Co., Wallingford, Conn ... 34

**Plumbers' Tools.**
- Osborne C. S. & Co., Newark, N. J ... 10

**Police Equipments.**
- J. P. Lovell's Sons, Boston, Mass ... 35

**Polishing Machines.**
- Watson & Stillman, 204 E. 43d, N. Y ... 43

**Polish, Stove and Metal.**
- Parlor Pride Mfg. Co., Boston, Mass ... 3

**Poultry Nettings.**
- Clinton Wire Cloth Co., Clinton, Mass ... 3
- "Silver Finish" ... 2

**Power Hammers.**
- Belden E. A. & Co., Danbury, Conn ... 40
- Bradley & Co., Syracuse, N. Y ... 44
- Dienelt & Eisenhardt, Philadelphia, Pa.. 42
- Duncan W. P. & Co., Bellefonte, Pa ... 43
- Stiles & Parker Press Co., Middletown, Conn ... 44

**Presses, Dies, &c.**
- Crosby G. A. & Co., Chicago, Ill ... 41
- E. W. Bliss Co., Brooklyn, N. Y ... 42
- Ferracute Machine Co., Bridgeton, N. J ... 42
- Stiles & Parker Press Co., Middletown, Conn ... 44

**Presses, Power,** *Makers of.*
- E. W. Bliss Co., 17 Adams, Brooklyn ... 42
- Merriman A. H., West Meriden, Conn ... 42
- Stiles & Parker Press Co., Middletown ... 44
- Waterbury Farrel Foundry and Machine Co., Waterbury, Conn ... 40

**Pulleys.**
- Walker Mfg. Co., Cleveland, O ... 43

**Pumps, Force.**
- Field Force Pump Co., Lockport, N. Y ... 7
- Myers F. E. & Bro., Ashland, O ... 7
- Union Mfg. Co., 103 Chambers, N. Y ... 7

**Pumps,** *Makers of.*
- Clark Brothers, Belmont, N. Y ... 39
- Douglas W. & B., Middletown, Conn ... 7
- The Humphreys Mfg. Co., Mansfield, O ... 7
- Silver & Deming Mfg. Co., Salem, O ... 7
- Union Mfg. Co., 103 Chambers, N. Y ... 7

**Pumping Machinery.**
- Dean Bros. Steam Pump Works, Indianapolis, Ind ... 40

**Punching and Shearing Presses.**
- Heartley Geo. W., Toledo, O ... 28
- Stiles & Parker Press Co., Middletown, Conn ... 44
- Watson & Stillman, 204 E. 43d, N. Y ... 43

**Radius Link Planer Attachment.**
- Pedrick & Ayer, Philadelphia ... 43

**Rails, Iron and Steel.**
- Allentown Rolling Mills, Allentown ... 5
- Cambria Iron Co., Johnstown, Pa ... 5
- Joliet Steel Co., 11 Pine, N. Y ... 36
- Montour Iron & Steel Co., Danville ... 36
- Scranton Steel Co., 56 Broadway, N. Y ... 36

**Railway and Machinists' Supplies.**
- Rogers H. A., 19 John, N. Y ... 13

**Railroad, Mill, and Mfrs.' Supplies.**
- Greene, Tweed & Co., 83 Chambers, N. Y. 38

**Rakes, Hand.**
- Gibbs Lawn Rake Co., Canton, O ... 26

**Ratchet Drills.**
- The Billings & Spencer Co., Hartford ... 3

**Rat Traps.**
- Graham J. H. & Co., 113 Chambers, N. Y. 8
- Hotchkiss, E. S., 113 Chambers, N. Y ... 10

**Razors.**
- J. R. Torrey & Co., Worcester, Mass ... 10

**Real Estate.**
- Southack F., 401 Broadway, N. Y ... 26

**Refrigerators.**
- Heinz & Munschauer, Buffalo, N. Y ... 10

**Resolvents.**
- International Mfg. Co., Cleveland, O ... 44

**Rivets.**
- Blake & Johnson, Waterbury, Conn ... 3
- Grundy & Disosway, 195 Greenwich, N. Y. 13
- Old Colony Rivet Co., Kingston, Mass ... 2
- Plymouth Mills, Plymouth, Mass ... 12
- Reed & Prince, Worcester, Mass ... 11
- Townsend W. P. & Co., Pittsburgh, Pa ... 41

**Roofing.**
- Garry Iron Roofing Co., Cleveland, O ... 8

**Rock Drills.**
- Clayton Air Compressor Works, Brooklyn, N. Y., and 43 Dey, New York ... 44

**Rubber Goods.**
- Hartford Rubber Works, Hartford, Ct ... 37

**Rules,** *Manufacturers of.*
- Stanley Rule & Level Co., 29 Chambers, N. Y ... 9

**Rubber Valves.**
- Wyckoff A. & Son, Elmira, N. Y ... 26

**Sad Irons.**
- Enterprise Mfg. Co., Philadelphia ... 38

**Sap Spouts.**
- Post C. C., Burlington, Vt ... 34

**Sash Balances.**
- Huguinin R. B., Hartford, Conn ... 32

**Sash Cords and Chains.**
- Morton Thos., 65 Elizabeth, N. Y ... 10
- Smith & Egge Mfg. Co., Bridgeport ... 34
- Tolman J. P. & Co., Boston, Mass ... 29

**Sash Pulleys.**
- Empire Portable Forge Co., Cohoes, N. Y. 29

**Saw Sets.**
- Borthwick Saw Set Co., Philadelphia ... 31
- Morrill Chas., 64 College Place, N. Y ... 34

**Saws,** *Makers of.*
- Atkins E. C. & Co, Indianapolis, Ind ... 32

**Scales,** *Manufacturers of.*
- Arc Scale Co., Davenport, Iowa ... 34
- Buffalo Scale Co., Buffalo, N. Y ... 8
- Chatillon John & Sons, 85-89 Cliff, N. Y.. 10
- Riehle Bros., Philadelphia ... 8

**Screens, Window and Door.**
- Porter Mfg. Co., Burlington, Vt ... 11

**Screw Cutting Machinery.**
- Wiley & Russell Mfg. Co., Greenfield, Mass ... 44

**Screw Drivers.**
- Ellrich Hdw. Mfg. Co., Plantsville, Conn. 10
- Kolb G. F., Philadelphia, Pa ... 39
- Thomas C. & Co., Birmingham, Conn ... 41

**Screws,** *Makers of.*
- Bruce Geo. W., 1 Platt, N. Y ... 9
- Wm. H. Haskell Co., Pawtucket ... 41
- Miles F. S., 205 Quarry, Philadelphia ... 6

**Scroll Saws.**
- Seneca Falls Mfg. Co., Seneca Falls, N. Y. 44

**Scythe Stones and Whetstones.**
- A. F. Pike Mfg. Co., Pike Station, N. H ... 33
- Cleveland Stone Co., Cleveland, O ... 33
- Lake Huron Stone Co., Detroit and Chicago ... 33

**Scythes.**
- New London Scythe Co ... 8

**Shafting,** *Makers of.*
- Cresson Geo. V., Philadelphia, Pa ... 43
- Pierson & Co, 24 to 27 West, N. Y ... 4
- Sellers Wm. & Co., Philadelphia, and 79 Liberty, N. Y ... 43

**Shears and Scissors.**
- Acme Shear Co., Bridgeport, Conn ... 33
- Clayton Bros., Bristol, Conn ... 10
- Cleveland Machine Co., Cleveland, O ... 10
- Henry Seymour Cutlery Co., 84 Chambers, N. Y ... 10
- Schollhorn Wm. & Co., New Haven, Conn. 10

**Ship Chandlery.**
- Creed Geo. H., 103 Reade, N. Y ... 10

**Shovels, Spades and Scoops.**
- Bruce George W., 24 Duane, N. Y ... 9
- Hussey, Binns & Co., Pittsburgh, Pa ... 31

**Show Cases.**
- Eureka Show Case Co ... 31

**Shutter Workers.**
- Butler Hardware Co., 18 Warren, N. Y ... 38

**Silverware.**
- R. Wallace & Sons Mfg. Co., Wallingford, Conn ... 34

**Sinks.**
- Douglas W. & B., Middletown, Conn ... 7
- Kilbourne & Jacobs Mfg. Co., Columbus. 39

**Skates, Ice.**
- Union Hardware Co., Torrington, Conn.. 26

**Smelting Works.**
- Reeves Paul S., 760 South Broad, Phila ... 44

**Speaking Tubes.**
- Ostrander W. R. & Co., 21 & 23 Ann, N. Y. 26
- Wollensak J. F., Chicago, Ill ... 34

**Speed Indicators.**
- Montgomery & Co., 105 Fulton, N. Y ... 33

**Spelter.**
- Manning & Squier, 113 Liberty, N. Y ... 2

**Springs.**
- Morgan Spring Co., Worcester, Mass ... 3
- Sabin Machine Co., Montpelier, Vt ... 37
- Titus & Babcock, Rochester, N. Y ... 10
- Tuck Mfg. Co., Brockton, Mass ... 4

**Spring Hinges.**
- Union Mfg. Co., 103 Chambers, N. Y ... 7

**Steam Hammers, &c.,** *Makers of.*
- Dienelt & Eisenhardt, Philadelphia ... 42
- Dudgeon Richard, 24 Columbia, N. Y ... 10

**Steam Pumps, &c.,** *Manufacturers.*
- A. S. Cameron Steam Pump Works, foot of East Twenty-third St., N. Y ... 13
- Cooke & Co., 22 Cortlandt, N. Y ... 9
- McGowan John H. & Co., Cincinnati, O.. 42
- Norwalk Iron Wks. Co., So. Norwalk ... 42

**Steam Traps.**
- Curtis Regulator Co., Boston, Mass ... 13
- Aller Amos, 109 Liberty, N. Y ... 41

**Steel Balls.**
- Simonds Rolling Machine Co ... 37

**Steel Figures and Alphabets.**
- Bellows & Dickey, Cleveland, O ... 13
- Stutzman J. M., 181 William, N. Y ... 9

**Steel Importers.**
- Abbott Jere & Co., New York & Boston.. 37
- Hobson Francis & Son, 97 John, N. Y ... 36
- Jessop Wm. & Sons, Sheffield, Eng., or 91 John, N. Y ... 36
- Newton & Shipman, 83 John, N. Y ... 36
- Pierson & Co., 24 to 27 West, N. Y ... 4
- Whitney A. R. & Co., 17 Broadway, N. Y.. 4

**Steel (Mushet's Special).**
- Jones B. M. & Co., 11 & 13 Oliver, Boston. 36

**Steel Manufacturers.**
- Burrows Thos. C., 99-101 John, N. Y ... 6
- Chrome Steel Works, Brooklyn, E. D. N. Y. 37
- Collins H. E. & Co., Pittsburgh, Pa ... 36
- Frankford Steel Co., Philadelphia, Pa ... 6
- Gautier Steel Department of Cambria Iron Co., Johnstown, Pa ... 3&36
- Hartman Steel Co., Pittsburgh, Pa ... 9
- Jessop Wm. & Sons, Sheffield, Eng., or John, N. Y ... 36
- Midvale Steel Co., Nicetown, Phila ... 6
- Miller, Metcalf & Parkin, Pittsburgh ... 36
- Moorhead & Co., Pittsburgh, Pa ... 6
- Moss F. W., 83 John, N. Y ... 36
- Naylor & Co., 99 John, N. Y ... 36
- Pennsylvania Steel Co., Steelton, Pa ... 36
- Plymouth Rolling Mill Co., Conshohocken, Pa ... 5
- Pottsville Iron & Steel Co., Pottsville, Pa. 30
- Riverside Iron Works, Wheeling, W. Va.. 8
- Rowland Wm. & Harvey, Frankford Philadelphia ... 44
- Singer, Nimick & Co., Pittsburgh, Pa ... 6
- Smith Bros. & Co., Pittsburgh, Pa ... 36
- Standard Steel Works, Philadelphia, Pa.. 6
- The Bolton Steel Co., Canton, O ... 13
- The Wilmot & Hobbs Mfg. Co., Bridgeport, Conn ... 37
- Troy Steel and Iron Co., Troy, N. Y ... 36
- Wardlow S. & C., Sheffield, Eng ... 36
- Wilson Hawksworth, Ellison & Co., Sheffield, England ... 36

**Steel,** *Manufacturers' Agents.*
- Hicks & Dickey, Philadelphia, Pa ... 4

**Steel Nails.**
- Brooklyn Wire Nail Co., Brooklyn, N. Y.. 2
- Jefferson Iron Works, Steubenville, O ... 33
- Jones & Laughlins, Limited, Chicago ... 35

**Steel Rolls.**
- Garrison A. & Co., Pittsburgh, Pa ... 4
- Seaman, Sleeth & Black ... 36

**Steel, Sheet.**
- Standard Iron Co., Bridgeport, O ... 36

**Steel Spiral Springs,** *Manufacturers.*
- Cary & Moen, 234 W. 29th, N. Y ... 3
- Chatillon John & Sons, 85 to 89 Cliff, N. Y 10
- Rowland Wm. & Harvey, Frankford, Philadelphia ... 44

**Steel, Tool.**
- Frankford Steel Co., Philadelphia, Pa ... 6
- Jessop Wm. & Sons, Sheffield, Eng., 91 John, N. Y ... 36
- Leng John S., 4 Fletcher, N. Y ... 44
- Smith Bros. & Co., Pittsburgh, Pa ... 36

**Stocks and Dies.**
- Butterfield & Co., Derby Line, Vt ... 42
- The Billings & Spencer Co., Hartford, Conn ... 3
- Wiley & Russell Mfg. Co., Greenfield, Mass ... 44

**Stove Linings.**
- Ostrander Jas. & Son, Troy, N. Y ... 38

**Tack and Nail Machinery.**
- Merritt E. & Co., Brockton, Mass ... 31

**Tack and Shoe Nail Machinery.**
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551 to 557 State St., Chicago, Ill.

### FOR SALE,

the Stock of Hardware, Fixtures, &c., of Brown Brown & Co. This is one of the old established Hardware stands and has enjoyed an exceptionally good run of custom, constantly increasing in volume the last ten years. There has never been an opportunity in Ohio that has presented better chances for people who desire to go into the Hardware business. The stock throughout is one of the cleanest in Ohio, there being no dead stock on hand and must be sold immediately, as we are GOING INTO OTHER BUSINESS. For any one who desires a business with an established trade this is an opportunity which presents itself BUT ONCE IN A LIFETIME.

BROWN, BROWN & CO.,
Columbus, Ohio.

### *FOUNDRY FOR SALE,*

situate in Sharpsville, Mercer Co., Pa., together with Machine Shop, Black Smith Shop, Pattern House, Patterns, Office, &c., being fully equipped and in active operation with a big paying business. 10 blast furnaces in Sharpsville and this the only foundry. Railroad connection with the E. & P., B. & O. and N. Y. L. E. & W. Railroads. Owner wants to sell on account of his age. Full particulars furnished on application to

W. W. SHILLING,
Sharon, Pa.

WANTED.—The services of a live, active young man with good business experience and from $10,000 to $15,000 to invest in an established Foundry and Machine shop now doing a good business, but desirous of extending and enlarging same. Address

"EXTENSION,"
Office of *The Iron Age*, 66 and 68 Duane St., N. Y.

A BLAST Furnace Manager or Superintendent who has had experience with both Anthracite and Coke furnaces, capable of analyzing stocks and product, wishes engagement. Address
"FURNACEMAN,"
Office of *The Iron Age*, 66 and 68 Duane Street, N. Y.

WANTED—By an experienced Double Entry Bookkeeper and Cashier, a position by March 1st—iron manufacturing business preferred. Satisfactory references and security if desired. Address
"BOOK-KEEPER,"
Office of *The Iron Age*, 66 and 68 Duane Street, N. Y.

WANTED—By a thorough hardware man and traveler, position with a manufacturing hardware or cutting house; large acquaintance, and control trade; best references; moderate salary. Address
"WORKER,"
Office of *The Iron Age*, 66 and 68 Duane street, N. Y.

A GENTLEMAN who has traveled extensively through South America and other countries desires to make arrangements with good factories, with the view of making a tour through the different countries shortly. Address "CULLOM,"
Office of *The Iron Age*, 66 and 68 Duane Street, N. Y.

### BLOWER FOR SALE!

SECOND HAND,
NO. 5 McKENZIE.
S. H. BARNUM, New Haven, Conn.

A THOROUGHLY Competent Mechanical Engineer. Experienced in Draughting and Constructing, and in estimating costs of all kinds of Engines, Boilers, Hydraulic Work, Millwork and general machinery, and in planning and building new work, &c., desires an engagement. Address "W. B. Y.,"
Office of *The Iron Age*, 66 and 68 Duane St., N. Y.

FOREMAN TO A BOX SHOP WANTED.—A man capable of taking charge of machinery and general supervision of a shop making wooden packing boxes. Apply at once to CHAPMAN & DEWEY, Security Building, Room 20, Kansas City, Mo.

## Special Notices.

### AUCTION NOTICE!

### HAYDOCK & BISSELL,

Wholesale Auctioneers.

Large and Peremptory Trade Sale of

SHELF HARDWARE
AND
House Furnishing Goods,

*On Wednesday and Thursday, Feb. 2d and 3d, 1887, at 10 o'clock A. M. each day, at our Salesrooms,*

12 Murray St. and 15 Park Place, N. Y.

This sale will comprise a very large assortment of goods direct from the manufacturers, including:

**Cast-Steel Hammers, Hatchets, Hand and Panel Saws; Zinc, Brass and Copper Oilers; Solid Bronze Butts and Knobs, Locks, Wro't-Butts, Screw Drivers, Axes; Socket, Firmer and Framing Chisels; Auger Bits; Gimlet Pointed Screws; First Quality Double Smooth, Jack and Fore Planes, Brushes, Axe Handles, Shovels and Spades, Hindoostan Stone, &c., &c.** Also,

By order of JAMES M. OAKLEY,
*Assignee of H. C. RAYMOND,*

STOCK OF HARDWARE

Including a General Assortment of

**Files, Brass Butts, Ship Augers, Paints, Window Glass, Ravens Duck, Canvas, &c., &c.** Also,

By Order of R. J. DEAN & CO.

TO PAY STORAGE AND ADVANCES,

**37 Cases Nickel-Plated Bit Braces. 1 Case Nickel-Plated and Bronze Sash Fasts.**

This Sale will be worthy the attention of the Trade. The entire Catalogue Will be sold without reserve.

*Wednesday, Thursday and Friday, Feb. 9th, 10th and 11th.*

IMPORTANT AUCTION SALE
OF

Table Cutlery on ninety days' time for approved paper without interest, by order of the Manufacturers and Importers; also, by order of C. S. Landers, Trustee, the entire remaining stock of finished goods of The Bridgeport Knife Co.

This sale will comprise about
40,000 dozen Table and Dessert Knives and Forks. First and Second Quality; desirable patterns.
4000 pair Carvers, in Ivory, Bone, Ivoride, Rubber, Stag, Ebony and Cocoa Handles.
1000 dozen Table, Medium and Dessert Knives only, in Ivory, Bone, Ivoride, Rubber and Plated Handles.
1200 dozen Butcher, Bread, Cheese and Pallette Knives.
2500 dozen Pocket Knives, Scissors and Shears.
Large line Silver-Plated Spoons, Forks and Knives.
—— Cases Assorted Knives and Forks, &c., &c.

This sale will be worthy the attention of the Trade. The entire catalogue will be sold without reserve. For the information of the trade we are instructed to print the following:

"Office of Charles S. Lander's Trustee.
"BRIDGEPORT, Jan. 25, 1887.

"Messrs. HAYDOCK & BISSELL.
"*Dear Sirs:*—The goods to be offered by you for the sale of February 9th, 10th and 11th, and which will be sold without reserve, comprises the entire remaining stock of this brand of goods, and no more goods will be made at the Bridgeport Factory.
"Yours respectfully,
"C. S. LANDERS, Trustee."

### FIRE!

We take pleasure in announcing to our friends that we have thoroughly overhauled and assorted our damaged stock and are now in position to fill orders with new goods in clean packages. Damaged goods and seconds will go to auction or be sold as they are, in job lots.

WHEELING HINGE CO.

### SECOND HAND,

CHEAP.

1 Planer, 6 ft., 24 x 24 in., with chuck, &c.
5-ft. 24 x 24 Planer.
1 Planer, 3 ft. 15 x 12 in.
1 20-ft bed, 28-in Putnam Lathe.
1 9 ft. 27 in. Engine Lathe.
1 Engine Lathe, 8 ft x 22 in., with chuck, &c.
1 Engine Lathe, 6 ft. x 18 in.
1 No. 4 Brainard Universal Miller.
1 Monitor Head Lathe.
1 Fox Lathe, all attachments.
1 26-in. Upright Drill. Good as new.
1 Double-acting Power Press.
1 4-spindle Garvin Drill.
Send for List of Second hand Tools.

New York Machinery Depot,

Bridge Store No. 16, on Frankfort st., New York.

### FOR SALE,

one 18 x 18 Upright Marine Engine, also one Worthington Duplex Brass Lined 14 x 10½ x 10 Steam Pump. Both complete and in good order, Newsham, Nork & Douglas.

FRONT & DICKINSON,
Philadelphia.

### WANTED,

a Cutlery man who has had experience in Pennsylvania or Ohio and Michigan. Address, stating terms, experience, &c., "CUTLERY,"
Office of *The Iron Age*, 66 and 68 Duane Street, N. Y.

### Wanted,

a Practical Rolling Mill Man to go out to Missouri to inspect and report upon a property. Address

"ROLLING MILL,"
P. O. Box 1086,
Philadelphia, Pa.

### To Boiler Manufacturers.

Wanted two or three Manufacturers in widely separate districts to manufacture and sell a superior *Water Tube Boiler* on royalty. Secured by patent and now being made in England. Particulars given by

PHILIP S. JUSTICE & CO.,
14 N. Fifth St., Philadelphia.

# Trade Report.

## British Iron and Metal Markets.

[*Special Cable Dispatch to The Iron Age.*]

LONDON, WEDNESDAY, January 26, 1887.

**Scotch Pig.**—At the close the market is not quite so steady, and makers brands are quoted as follows:

| | | |
|---|---|---|
| Coltness, alongside, Glasgow | | 59/6 |
| Langloan, " | " | 55/ |
| Glengarnock, " | Ardrossan | 53/ |
| Gartsherrie, " | Glasgow | 54/6 |
| Shotts, " | at Leith | 52/ |
| Eglinton, " | Ardrossan | 48/ |
| Dalmellington, " | " | 49/6 |
| Carnbroe, " | " | 50/ |

Carriage from Ardrossan to Glasgow is 1/ ₩ ton.

**Cleveland Pig.**—The market is a little weaker, Fo. 3 Foundry having fallen off to 37/6 @ 37/9, as against 39/5 @ 39/6 last week.

**Bessemer Pig.**—W. C. Hematites are unchanged; mixed lots, Nos. 1, 2 and 3, being quoted at 51/.

**Bessemer Blooms.**—Blooms, 7 x 7 inches, remain unchanged at 80/ @ 85/ at shipping ports.

**Manufactured Iron.**—The market is a little steadier. Prices may be quoted as as below:

| | £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Staff. Ord. Marked Bars | 7 | 0 | 0 | @ | 7 | 10 | 0 |
| " Medium " | 6 | 0 | 0 | @ | 6 | 10 | 0 |
| " Common " | 5 | 5 | 0 | @ | 5 | 10 | 0 |
| Hoops, 20 W. G. and over. | | | | | | | |
| " Common Best | 6 | 15 | 0 | @ | | ..... | |
| " Medium | 6 | 0 | 0 | @ | 6 | 10 | 0 |
| " Common | 5 | 5 | 0 | @ | 5 | 15 | 0 |
| Sheets, 20 W. G. and under. | | | | | | | |
| " Ordinary Best | 7 | 5 | 0 | @ | 8 | 0 | 0 |
| " Common | 6 | 5 | 0 | @ | 7 | 0 | 0 |

**Steel Rails.**—The market is unchanged. We quote Ordinary sections, £3. 17/6 @ £4. 2/6.

**Old Rails.**—The market has been irregular, with quotations in Double Heads, c.i.f., New York, fluctuating between 77/6 and 80/.

**Scrap.**—Heavy Wrought Scrap has remained unchanged, quotations being 60/ @ 65/.

**Copper.**—As compared with last week, this metal is lower, Chili Bars at the close being quoted at £38. 15/ @ £39. 5/, with Best Selected at £43 @ £44.

**Tin.**—This metal is unchanged at the close, with Straits, spot, quoted at £101. 15/ @ £102. 5/, and futures, £102. 15/ @ £103. 5/.

**Tin Plates.**—The market is ir regular with prices nominally unchanged as follows:

| | | |
|---|---|---|
| Tin Plates, 10x14, 1st qual. Charcoal | 18/ | @ 19/ |
| " " 2d " " | 16/ | @ 17/6 |
| " " 1st " Coke | 15/ | @ 15/6 |
| " " 2d " " | 14/ | @ 14/6 |

**Spelter.**—The market is firmer. We quote the following prices, an advance of £1: Ordinary at shipping ports, £14. 10/ t@ £14. 15/.

**Freights.**—Steam freights from Glasgow to New York have advanced to 10/.

## Financial.

Office of *The Iron Age*,
WEDNESDAY EVENING, January 26, 1887.

As the week closes the markets are considerably affected by war rumors from the other side, which indicate the existence of more real apprehension respecting the future than has been admitted heretofore. Wheat on Monday advanced 1½¢ ₩ bushel, while cotton declined and sterling exchange was very strong, but later, when the report became less belligerent, reaction ensued, and the net decline is about ½¢ ₩ bushel. Corn is easier. Provisions firmer, closing quiet. Cotton dull. Wool quiet. Hides moderately active. Tobacco dull and nominal. Raw sugar steady. Coffee dull. Petroleum quiet. Ocean freights quiet and steady. Conjectures are rife respecting the practical operation of the Inter-State Bill, and labor disturbances in the harbor coal trade and freighting business have had a distracting influence. In discussing the probable effect of the Interstate Commerce bill, President Roberts, of the Pennsylvania, said: "The first effect will be to paralyze to some extent the general business of the country, because of the fact that the public are not prepared for so complete and radical a change in the method of transportation as the bill seeks to inaugurate. It would be difficult to change radically the customary methods of doing business over the entire country, even if such a change were for the better, without for the time being suspending many of the large transactions of business. While a good many inconveniences and absurdities will be discovered in it, yet it has many features from which much good may be derived by the public." A conference will be held before long by the pool lines to determine what concerted attitude may be taken by them in case the bill is signed by the President. It is said that the Central Traffic Association of Chicago is likely to be dissolved within a week. The boycott of steamship companies that have accepted freight from the Old Dominion Line in disregard of orders from the Knights of Labor is assuming formidable proportions and seriously affecting the commerce of the port. Elevated and warehouse employees are instructed to deliver no grain to the Anchor Line steamers moored at New York and Brooklyn, and yesterday the agents of the

# Trade Report.

White Star, Compagnie Générale Transatlantique, National and other ocean steam lines, were notified by their dock employees that they would not load "boycotted" coal on board the outgoing vessels, nor permit outsiders to do it. In some instances steamers are seeking other ports. The course of trade, with the exceptions noted, is generally satisfactory. Manufacturers are prospering, railroad earnings as a whole are better than one year ago, money is easy, and the volume of trade is well maintained. As stated by one of the mercantile agencies, the bank clearings outside of New York are the largest ever known for the season. Last week the clearings of 33 cities outside of New York amounted to $333,305,406, against $285,198,473 in 1886, an increase of 16.2 %. Three cities only show a decrease, and one of these was New York, its falling off being 6.4 %.

The Stock Exchange markets were generally strong early in the week, the passage of the Interstate Commerce Bill making little impression. On Saturday the only feature was higher prices for Jersey Central and Consolidated Gas, while Hocking Valley was lower. On Monday the entire market declined from 1 % to 5 % on warlike news from Europe, and there was heavy selling on foreign account. The coal-handlers' strike accelerated the downward movement. The notable exception was a rise in Hocking Valley, due to the recovery by President Show of $946,000 of assets from an ex-official of the corporation. On the subsidence of the war scare on Tuesday the market recovered, and to-day stands substantially as before. Quotations as follows: Canada Pacific, 64⅛; Colorado, Hocking Valley and Toledo, 35⅞; Consolidated Gas, 84¾; Delaware, Lackawanna and Western, 135¼; Denver and Rio Grande pref., 60⅝; Kan. and Tex., 29½; Lake Shore, 92⅝; Louisville and Nashvile, 62½; Man Con., 156¾; Missouri Pacific, 105¼; New York Central, 112⅞; New York and New England, 55⅞; New Jersey Central, 66¾; Northern Pacific preferred, 58¼; Ohio and Mississippi, 26; Oregon Navigation, 99½; Oregon Transcontinental, 30⅞; Reading, 38½; Richmond and West Point, 43¼; St. Paul and Omaha, 48⅛; St. Paul and Duluth, 60; Union Pacific, 56⅛; Western Union Telegraph, 72⅜.

The market for Sterling is very dull, and, in anticipation of the red uction in the Bank of England rate of discount to morrow, the demand rate was reduced ½¢ on the £ to 488.

Government bonds closed as follows:

| | Bid. | Asked. |
|---|---|---|
| U. S. New 3 | 100 | — |
| U. S. 4½, 1891, coupon | 110¼ | 110¾ |
| U. S. 4, 1907, coupon | 128¼ | 128½ |
| U. S. Currency 6s, 1895 | 125⅞ | — |
| U. S. Currency 6s, 1896 | 128⅝ | — |
| U. S. Currency 6s, 1897 | 131⅝ | — |
| U. S Currency 6s, 1898 | 134 | — |
| U. S. Currency 6s, 1899 | 136⅝ | — |

The New York weekly bank statement shows an increase of $184,575 in surplus reserve, which now stands at $18,796,000; the loans are expanded $3,380,500, and the deposits other than United States are up $5,873,300. The loans being in favor of mercantile customers, the liberal amount is assumed to indicate confidence in an active spring trade. Currency is returning freely to this center, affording promise of continued ease. Silver is lower. The Secretary of the Treasury on Saturday issued the 146th call for the redemption of bonds. The call is for $13,887,000 of the 3 per cents, and it matures March 1. The bonds called are as follows: $50, Nos 26 to 46; $100, Nos. 375 to 582; $500, Nos. 163 to 145; $2000, Nos. 1321 to 2016; $10,000, Nos. 3959 to 5315. Parties holding any of these bonds can obtain immediate payment, with interest to date of presentation, by requesting the same in the letter forwarding the bonds for redemption. There are now exactly $40,000,000 uncalled 3 per cent. bonds outstanding. The new $5 silver certificates will be issued next week. The face of the new notes bear a vignette of General Grant.

According to the Custom-House reports the imports of specie at this port during the week wers $205,345, making a total since January 1 of $750,701, compared with $2,509,000 for the same time in 1886, and the exports were $444,733, making a total of $3,154,000 since January 1, as against $871,000 for the same time in 1886.

The imports of merchandise at this port during the week were $1,349,000 below those of the previous week, the total valuation being $7,727,560, of which $2,874,000 represent dry goods, making a total since January 1 of $25,402,132, against $23,000,000 for the same time last year, and nearly $28,000,000 in 1885. The exports are $775,000 below those of the previous week, the valuation being $5,486,569, making the totol since January 1, $17,730,672, as compared with $23,825,000 for the same time last year, and $28,981,000 in 1885. The items include 80,572 barrels flour, 803,949 bushels wheat, 351,120 bushels corn, 11,900 bales cotton, 5,945,771 gallons petroleum, 7,146,068 ℔ cut meats, 5,145,490 ℔ lard.

The eastward freight movement from Chicago last week comprised only 36,972 tons, which is surprisingly small in consideration of the fact that rates were cut by nearly all the lines. West bound rates, so it is reported, will be restored next Monday.

## NEW YORK.

One fact which has had the effect of curtailing business for Foreign Material of all kinds for shipment to go to terrritory west of the Allegheny Mountains is the refusal of the railroad companies to make any rates, while there is uncertainty concerning the operation of the Interstate Commerce Bill.

**American Pig.**—Only a limited number of small sales have taken place during the week under review, those buyers who are not well supplied purchasing only for immediate requirements, being willing to take their chances. No large quantities could be secured in any case without paying a very substantial advance. Sellers are either entirely unable or are unwilling to book large orders, so that while the volume of business is small there is an undercurrent of strength. Some of the large companies are somewhat behind in their deliveries. We quote for moderate-sized lots of standard to choice brands $21.50 @ $22.50 for No. 1 Foundry, $20 @ $21 for No. 2 and $18 @ $19 for Gray Forge. Considerable comment has been made over the purchase by a mill in Eastern Pennsylvania at Middlesboro' of 20,000 tons of Cleveland Pig some time since.

**Bessemer Pig.**—A good deal of misunderstanding seems to have grown out of the purchase, reported from Chattanooga, of 40,000 tons of English Bessemer Pig for the Roane Iron Company, who have been completing their arrangements to make Bessemer Steel Rails. Thus far the purchase has not been confirmed in this market, and doubts are expressed concerning the accuracy of the report. It is probable that their Rockwood Furnace, running on Cranberry Ores, is quite unable to supply their requirements for Bessemer Pig, and Foreign Bessemer would be the only available. This purchase has absolutely nothing to do with the present status of the Southern Pig-making industry, since there is not a single furnace, except the Rockwood, which is making this grade of Iron. It is not at all a question of competition between Southern and English Iron. We hear of no other business in Foreign Pig, which is nominally $20.75 @ $21, though offered under exceptional circumstances at $20.50, nor in Domestic, which is unchanged at nominally $19.50 @ $20.50 at furnace.

**Scotch Pig.**—The market is very quiet, and very few sales of small volume are being made. The business of importers has differed widely thus far this year. Some have done even less than they did at the same time a year ago, others reporting larger sales than at that period. We quote for moderate sized lots as follows: Coltness, $23.50; Glengarnock, $22.50; Shotts, $22.50; Summerlee, $22.50 @ $23; Carnbroe, $22; Clyde, $21 @ $21.50; Dalmellington, $21 @ $21.50, and Eglinton, $21, all to arrive.

**Spiegeleisen.**—There is an inquiry in the market for 5000 tons, summer delivery. We quote nominally $27.50 @ $28 50 for 20 %.

**Bar Iron.**—We quote: Common, 2.00¢ @ 2.10¢; Medium, 2.10¢ @ 2.15¢, and Refined, 2.20¢ @ 2.50¢, in round lots on dock.

**Structural Iron.**—We quote according to quality, for Angles, 2.40¢ @ 2.50¢, delivered, and Tees at 2.75¢ @ 2.9¢, for round lots. Steel Angles are quoted 2.50¢ @ 2.70¢, according to quality. Store quotations remain 2.75¢ @ 2.85¢ for Angles and 3¢ for Tees. American Beams and Channels have been advanced to 3.3¢ base from dock for all orders.

**Plates.**—We quote for round lots: Common or Tank, 2.45¢ @ 2.6¢; Refined, 2.50¢ @ 2.60¢; Shell, 2.7¢ @ 2.8¢; Flange, 3.7¢ @ 3.8¢; Flange, Extra, 4¼¢ @ 4½¢. For small lots of Steel Plates the quotations are as follows: Tank, 2.90¢ @ 3¢; Ship, 3¢; Shell, 3¼¢ @ 3.50¢; Flange, 3.50¢ @ 3.75¢, and Fire-Box, 4¼¢ @ 4½¢, on dock.

**Steel Rails.**—The only transaction of any consequenc during the week has been the sale of 10,000 tons of 70-℔ rails to the Atchison, Topeka and Santa Fe at $39.50 at Pittsburgh, coupled with the option of delivery at the seller's convenience at any time in 1887. Eastern mills quote nominally $39 @ $40 for standard sections, but are relatively higher than the Chicago market. Since the great bulk of the large business still in the market is for the West and Northwest, the Eastern market, therefore, promises to be quiet for some time.

**Billets.**—Basic Billets, 4 x 4 inches, are held at $32.50 @ $32.75, which is relatively higher than Domestic in the Pittsburgh market.

**Steel Wire Rods.**—The market has been fairly active, and we record sales of about 3000 tons in the aggregate, at $42.50 ex-ship, buyers taking risk of duty. A lot of 800 tons has been lost at sea. We discuss the situation editorially.

**Nail Slabs.**—Au inquiry for 30,000 tons of Foroign Nail Slabs made during the week could not be filled, because early delivery was asked.

**Old Rails.**—Earlier in the week there have been sales of 2000 tons of foreign Double Heads at $26 ex-ship, to go to a mill in Illinois, 700 tons of American T's at $25 on cars Jersey City, to go to a mill in the Schuylkill Valley, and a number of smaller lots aggregating about 1000 tons at $25. Since then the market has weakened, and both foreign and domestic stock are offered at lower figures. Consumers are conceded to be well supplied and are holding off, and so far as the East is concerned no buying of any consequence is expected. On the other hand, it is justly urged that so long as Mill Pig and Muck Bars are as scarce and relatively as high as they are in the West a buying movement will quickly result from even a small drop in prices at the seaboard, at least during the next month. The flurry of Monday and Tuesday was due to the war scare in Europe, causing uneasiness among weak speculative holders abroad, who cabled for offers.

**Scrap.**—High prices continue to be paid for spot choice yard lots, while round lots of foreign, for shipment, are offered as low as $23.50.

**Rail Fastenings.**—We quote Spikes 2.50¢ @ 2.60¢ delivered. Angle Fish Bars may be quoted 2.20¢ @ 2.25¢. Bolts and Square Nuts are 3.10¢ @ 3.20¢, and Bolts and Hexagon Nuts 3.25¢ @ 3.35¢.

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Messrs. Davenport & Fairbairn, of Erie, Pa., have appointed Messrs. Stroud & Co., of 104 John street, New York, their sole agents for the sale of their Chilled Iron Car Wheels. in that part of the United States situated east of the 78th meridian of longitude, and in Canada.

## Philadelphia.

Office of *The Iron Age*, 220 South Fourth St., PHILADELPHIA, January 25, 1887.

**Pig Iron.**—The market shows the same feverish and unsettled feeling as mentioned for some weeks past. Prices are firm, and, without intending it, buyers seem bound to put prices up on themselves. They are continually asking for quotations, and always trying to buy "another little lot," and as sellers do not wish to part with it, prices are naturally working toward a higher plane. Furnace owners say that if consumers would only be satisfied with their usual purchases, there would be plenty of Iron for all legitimate requirements. The increased output at furnaces is believed to be quite equal to the increase in consumption, but the desire to buy is far beyond what can be supplied, and sellers take the ground that, if people will have Iron in advance of their requirements, they must pay higher prices for it. A customer who is known to be in want of Iron can get small lots at comparatively low prices, say $18.50 @ $19 at tide for Gray Forge, $20 for No. 2 Foundry, and $21.50 @ $22 for No. 1. Outsiders or parties desiring to buy for March or April deliveries either cannot get it all or have to pay more—50 cents and sometimes nearly $1 per ton more money. Sellers do all they can to discourage buying, first, because they really believe it would be best for all concerned to prevent any advance that cannot be maintained, and, second, they desire to secure their share of the advance, if advance there must be. They have too vivid a remembrance of declining markets in the past, and will do their utmost to prevent anything likely to precipitate it now. They remember what a wonderful length of time buyers could hold off when the market was declining, and believe now that nine-tenths of the iron likely to be required within the next 60 days has already been purchased; and as production is steadily increasing they see no good reason for any further advance. Buyers take a different view of the matter. They argue that, if Iron is not likely to be higher, why should makers be so determined not to sell? Hence the buying fever is on, and so long as that remains prices must advance. In the abstract, Iron ought not to be higher, but all the same the tendency is strongly in that direction, and it is the purport of this article to report facts as well as opinions.

**Foreign Iron.**—There is some inquiry for both Bessemer and Middlesboro' Irons, but we are not in a position to report actual transactions, although it is believed that some hav e been made. The asking price is $21.75 @ $22 for Bessemer, and $19.50 @ $20 for Middlesboro' No. 3, and about $28.50 for 20 % Spiegel.

**Blooms.**—The market is very unsettled, owing to continued firmness abroad. Prices are held a shade over what consumers can afford to give, and as there are a good many risks in handling foreign goods buyers require a liberal margin for contingencies. A case in point this week: A 1500-ton lot of Rail Blooms was bought some time ago, and the product sold in steel rails. The vessel was lost, and although the Blooms were insured for cost it will require $4 to $5 to replace them, besides the 45 % duty on the additional cost. Quotations are nominally unchanged, but the market may change very quickly. To-day's prices about as follows: Rail Blooms at $30.50 @ $31 c.i.f., duty paid; Nail Slabs, $33.50 @ $34; Sheet-Iron Billets, $35 @ $37; higher qualities for Boiler Plate, &c., $38 @ $44. American Blooms as follows: Charcoal Blooms, $55 @ $56; Runout Anthracite, $46 @ $47; Scrap Blooms, $36 @ $37, and Ore Blooms, $36 @ $36.50.

**Muck Bars.**—The demand is fair, but there are very few Bars for sale, and such as can be had are firmly held at $34.50 @ $35, at mill. Some quote still higher prices.

**Bar Iron.**—There is no material change to notice this week. Mills are well sold up, and as the majority of large buyers have covered their requirements for some time to come, the current demand is only moderate. The advanced views of sellers also checks the demand for the time being, but there is so much work in sight that prices are considered perfectly safe. Nominal quotations are 2.1¢ for Best Refined Iron, but those who are compelled to buy find 2.2¢ the best they can do, as no one wants orders at less. Skelp Iron is a little firmer, with a very good demand at 2.2¢, although 2.25¢ is asked for anything later than February delivery. Sheared Skelp is also in good demand and firmly held at 2.45¢ @ 2.50¢.

**Plate and Tank Iron.**—There is a decided improvement in the demand, and prices are again firming up. There is more inquiry for almost everything in this line, and orders could not be placed at the rates ruling a week ago, although there is no quotable change in prices. Manufacturers are watching the course of the market very closely, and are somewhat conservative in quoting on deliveries beyond next month. An improvement is also very noticeable in Steel Plates, which are quoted as follows: Ordinary Plate, 2.50¢ @ 2.55¢, delivered; Tank, 2.5¢ @ 2.6¢; Shell, 2.75¢ @ 2.85¢; Flange, 3.5¢; Fire-Box, 4.25¢; Steel Plates, Shell, 3.25¢; Flange, 3.5¢; Fire-Box, 4½¢ @ 5¢.

**Structural Iron.**—There has been a good inquiry for all descriptions of Structural Iron, and prospects are thought to indicate renewed activity at an early date. Mills are full of work, and on new business are somewhat disposed to ask higher figures. An advance of three-tenths has been established on Beams and Channels, but other specialties are quoted about as follows: 2.5¢ for Bridge Plate; 2.30¢ for Angles; 2.8¢ @ 2.9¢ for Tees, and 3.3¢ forBeams and Channels.

**Sheet Iron.**—Considering the season, a fair demand prevails. Prices are firm at about the following figures:

| | |
|---|---|
| Best Refined, Nos. 26, 27 and 28 | 4 ¢ |
| Best Refined, Nos. 18 to 25 | 3¾¢ |
| Common, ¼¢ less than the above. | |
| Best Bloom Sheets, Nos. 26 to 28 | 4¾ @ 5 ¢ |
| Best Bloom Sheets, Nos. 22 to 25 | 4¼ @ 4½¢ |
| Best Bloom Sheets, Nos. 16 to 21 | 3¾ @ 4 ¢ |
| Blue Annealed | 3 ¢ |
| Best Bloom, Galvanized, discount | 57½ % |
| Common, discount | 62½ % |

**Steel Rails.**—The market is steady and unchanged at last week's prices. There is quite a good demand considering the large amount of orders already placed, and no doubt whatever is felt in regard to the future. Full employment at present or higher prices is confidently expected. Sales at $39 at mill, and $39.50 for small lots.

**Old Rails.**—Spot lots are dearer, and command $26 for T's, and $27 for D. H's. Spring shipments of T's are offered at $26, but buyers show preference for spot lots or delivered not later than February, hence futures are somewhat neglected at less money.

**Scrap Iron.**—The demand has improved considerably, and higher prices are bid for almost everything. Cargoes of No. 1 Scrap have been sold at $24 @ $24.25, and are now firmly held at $24.50. For small lots we quote Wrought Scrap, tide-water delivery, $24; Selected do., $24.50 @ $25.50; No. 2 do., $15 @ $16.50; Turnings, $14 @ $14.50; Old Car Wheels, $17 @ $17.50; Old Steel Rails, $21.50 @ $22.50; Cast Scrap, $15 @ $16; do. Turnings, $10 @ $10.50. Old Fish Plates, $29 @ $30.

**Wrought Iron Pipe.**—This department shows a very marked degree of strength. Prices have been advanced, and mills have all they can possibly handle, and in many cases are compelled to refuse orders. Discounts are as follows: Lap-Welded Black, 50 %; Lap-Welded Galvanized, 32½ %; Butt-Welded Black, 35 %; Butt-Welded Galvanized, 25 %; Boiler Tubes, 42½ %.

**Nails.**—A feeling of decided firmness is noticeable. Card rate has been advanced, making store price $2.50. Some mills refuse to sell large lots at the advanced rate, claiming that even at present price there is scarcely any more margin than when Nails were quoted $2 @ $2.10, as price of raw material and labor have advanced in proportion with the advance in card rate.

## Pittsburgh.

Office of *The Iron Age*, 77 Fourth avenue, PITTSBURGH, PA., January 25, 1887.

While there is no abatement in the volume of business in the general Iron trade, the feeling begins to obtain that the highest price has been reached, especially in Raw Material, which ever since the upward movement has been bringing more money relatively than the products. There are those who are apprehensive that the former has been pushed up higher than the actual condition of affairs warrants, but as there is a continued absence of speculation there does not appear to be any substantial grounds for the apprehensions aforesaid. The Western Iron Association, at its meeting in this city last Wednesday, did not advance the card as expected. A good many at the meeting favored the advance, and do so yet, notwithstanding it would carry with it an advance in wages to all the skilled ironworkers, but for various reasons it was deemed best not to make a change for the present. It is generally conceded that the danger line has been reached, and it was apprehended that the putting up of the card just now would be productive of a good deal more harm than good. The refusal to make the advance was not because it would increase the cost of skilled labor, but chiefly for the apprehension above noted. If it is developed later on that the business will stand an upward turn, without reaching the danger line, the advance will no doubt be made, as a special meeting of the Western Association can be called at any time. As a rule, it is the policy of our Iron manufacturers to deal justly with their men, and it is the object of this paragraph to arrest the impression, which appears to prevail to some extent, that it was in order to beat the Iron workers that manufacturers refused to put up the card.

**Pig Iron.**—There has been a very fair business the past week, and while pos ib'y the market is not so excited as it was just at the close of the year, there is no indication of weakness. On the contrary brokers report a scarcity of good Irons, and this is likely to continue for some time to come, in view of the fact that the furnaces not only here, but at all points West and South, are sold several months ahead. We quote as follows:

| | | |
|---|---|---|
| Gray Forge No. 1 | $21.00 @ $21.25, | 4 mos. |
| Gray Forge No. 2 | 19.50 @ 20.00, | 4 " |
| Gray Forge, All Ore | 21.50 @ 22.00, | 4 " |
| No. 1 Foundry | 22.00 @ 22.50, | 4 " |
| No. 1 All Ore Foundry | 22.50 @ 23.00, | 4 " |
| No. 2 Foundry | 21.00 @ 21.50, | 4 " |
| Charcoal Foundry | 22.00 @ 25.00, | 4 " |
| Cold-Blast Charcoal | 27.00 @ 30.00, | 4 " |
| Bessemer Iron | 22.00 @ 22.25, | 4 " |

Included in the sales reported were Gray Forge at $20 50, $20.65 and $20.75, cash, and Bessemer Iron at $21.75 cash. Some operators are impressed with the belief that Bessemer will settle down at $22 cash.

**Muck Bar.**—We can report sales of several thousand tons for February and March delivery, at $36.50 @ $37 cash; it was rumored that a sale had been made at $36.50 @ $37.50 cash, but it was not well-authenticated; certain it is, however, that some makers are asking $38 cash, and refusing to sell for less.

**Manufactured Iron.**—There is a continued good demand; mills continue to be well employed, and the outlook for an active spring trade never was better. In addition to the regular merchant trade the demand for specialties is increasing. It will not be long now until large orders for Skelp Iron will be on the market, and some of the mills will make a specialty of this, as they did last year, making it to the exclusion of almost everything else. As stated elsewhere, the Western Iron Association refused to advance the card at its meeting in this city last Wednesday. It is not improbable, however, but what it may be done within the next week or two, as some of the millmen still advocate an advance, and a special meeting of the association can be called at any time. Prices are still quoted upon a basis of 2¢ for Bars, 60 days, 2 % off for cash.

**Nails.**—There is a fair and increasing trade, and prices are steady at the recent advance, $2.60, 60 days, 2 % off for cash, with a rebate of 10 cents per keg on carload lots and upward. There are now but very few Eastern Nails offering, nor is it likely that there will be as long as Eastern manufacturers stick to the rates recently established by the Eastern Association. Chess, Cook & Co. have started up their new steel Nail factory, and there are no longer any Iron Nails being made in Pittsburgh; Wheeling quit making them a year or more ago. In addition to Chess, Cook & Co., Jones and Laughlins and Shoenberger & Co., are making Steel Nails. It is rumored that Zug & Co., whose Nail factory has been standing idle for a year or more, also contemplate making Steel Nails. The outlook for a good spring trade is very encouraging.

**Wrought Iron Pipe.**—At the regular monthly meeting of the manufacturers at New York last Thursday, it was decided to advance prices on Lap-Welded Pipe, Boiler Tubes and Casing 2½ %. Discounts on Black Butt-Welded Pipe, 37½ %; on Galvanized do., 27½ %; on Black Lap-Welded Pipe, 52½ %; on Galvanized do., 35 %; on Boiler Tubes, 42½ %; on Casing, all sizes, 45 %; 2 Inch Tubing, 16¢ ℔ foot, net; 2-Inch Line-Pipe, 14¢.

**Old Rails.**—We can report sales of 3500 tons Foreign Double Heads at equal to $29.50 delivered in Pittsburgh. Foreign Tees may be quoted at $28.50 @ $29. As the supply of American is about exhausted Western consumers will now have to draw their supplies from the seaboard. Latest cables indicate higher prices on the other side, in addition to which it is rumored that the railroads contemplate advancing freights, so that the prospect is encouraging for cheaper rails.

**Steel Blooms, &c.**—There is a continued good demand and prices are firm; mills are nearly all reported sold ahead. We can report sales of American Billets and Blooms at $35 @ $35.25, and American Nail Slabs at $34.75 @ $35. No sales of Crop or Bloom Ends reported, and it is difficult to give reliable quotations in consequence.

**Steel Rails.**—We are reported a sale of 10,000 tons at $39 50 cash on cars at mill in Pittsburgh. There is considerable inquiry, and the outlook for the mills is encouraging.

**Railway Track Supplies.**—There is a very good trade for the season, and prices are firm as quoted: Spikes, 2.60¢, 30 days, delivered; Splice Bars, 2.10¢ @ 2.15¢; Track Bolts, 3¢ @ 3¼¢ with Square and Hexagon Nuts.

**Old Material**—Continues in scant supply and prices are firm. No. 1 Wrought Scrap is now quoted at $23 @ $24, net ton; Wrought Turnings, $17 @ $18; Old Car Axles, $28 @ $29; Cast Borings, $13 @ $14; Old Car Wheels, $22 @ $23; Open-Hearth Steel, $23 @ $24, gross; Crucible Steel, $26 @ $27. Cast Scrap, $17 @ $18, gross.

## Chicago.

Office of *The Iron Age*, 36 and 38 Clark St., Cor. Lake St., CHICAGO, January 24, 1887.

**Pig Iron.**—Sellers report a very satisfactory business during the past week. Large transactions were not to be expected under the circumstances, so many furnace companies having sold their entire product for months to come, but there has been a good run of carload and 100 ton orders. The market is still strong, with no signs of abatement. Purchasers are in a number of cases endeavoring to secure options for future delivery, but are not very successful, manufacturers and furnace agents preferring to keep the control of the market in their own hands as far as they can. A further advance in prices is discouraged by leading sellers, but, as there are a number of others who believe Iron to be worth all that can be obtained for it, the future is difficult to forecast. We hear of idle furnaces being prepared to go into operation, and the additional supply from such sources may be sufficient to keep prices where they are. Quotations still vary considerably according to the condition of sellers, but a fair range is about as follows on a cash basis, time rates being usually 50¢ ℔ ton higher: Lake Superior Charcoal, Nos. 1, 2 and 3, $24 @ $25; Blackband Coke Softeners, $24.50 @ $25; Hanging Rock and Jackson County Soft, $22; Straight Coke Foundry No. 1, $23; Coke Foundry No. 2, $22 @ $22.50; Coke No. 3, $21; Southern Coke Foundry No. 2, $22.50 @ $23.

**Bar Iron.**—The demand keeps up very well, but particularly well for carwork. Car-builders are endeavoring to cover their requirements for anticipated orders, into which a large quantity of Iron will necessarily enter, one contract alone requiring 7500 tons. Prices are somewhat ragged. Pittsburgh and Youngstown mills still quote 2¢ at mill, 60 days, 2 % off for cash, which is equivalent to 2.1½¢ cash on cars here for desirable orders. Mills nearer here, however, are quoting 2.25¢ on cars at Chicago for equally desirable orders. Prices from store range as high as 2.4¢ @ 2.5¢, the latter for Best Refined New Puddled Bars in small lots.

**Structural Iron.**—In accordance with the action of the Beam manufacturers at New York on the 21st inst., prices have been advanced $\frac{1}{10}$¢, now being quoted at 3.8¢ from store. The price of Angles has also been advanced to 2.55¢ on cars here, but some of the manufacturers are still willing to sell at slightly lower figures; from store 2.75¢ @ 3¢ is asked, according to the size of the order. Tees are still held at 3 25¢ from store. Universal Mill Plates are quoted at 2.4¢ @ 2 5¢ on cars from mill.

**Plates.**—A very fair trade is reported for the season. Iron Plates are quoted as follows from store: Tank, 2.80¢; Shell, 3.25¢; Flange, 4.25¢. Steel Plates are firmer, and are now held from store at 3.5¢ for Shell, 4.25¢ for Flange and 4.75¢ for Fire-Box. The discount on Boiler Tubes has been advanced 42½ %, in accordance with the action of the manufacturers at a recent meeting.

**Merchant Steel.**—The demand is of such a character that rates are steadily advancing. Ordinary Tool Steels are now claimed to be held at a minimum of 8¢ from store; Specials still range from 13¢ to 20¢; Spring, 3¢ @ 4¢; Sheet, 7¢ @ 11¢. Bessemer Machinery is quoted at 2.70¢ rates from store; Open-Hearth at 3¢, and Crucible at 5¢. Miscellaneous Steels are quoted as follows for good round lots on cars from mill: Round-Edge Tire, 2.5¢; Square-Edge, 2.7¢; Toe-calk, 2.6¢; Sleigh-Shoe, 2.4¢; Spring, 2.8¢; Plow Slabs, 2.5¢ @ 2.7¢.

**Sheet Iron.**—A fair run of orders has been filled at 3¢ for No. 24, 3.1¢ for Nos. 25 and 26 and 3.2¢ for No. 27 Common Sheets. Some large orders for Galvanized Iron were placed among local manufacturers during the week, and prices are now firmer, although quotations as yet are unchanged. Manufacturers quote the jobbers 62½ % off on Juniata, while the jobbers quote 60 % off on Juniata and 62½ % off on Charcoal.

**Steel Rails.**—Prices are now quoted at $40 @ $42.50 for such orders as the local companies are able to arrange deliveries for, but otherwise there is no change to note in the condition of the market. Production, however, will be curtailed for a time by the stoppage of the North Chicago Rolling Mill Company's South Chicago Steel Works. The fly-wheel of the blooming mill engine broke last Thursday, and until it is replaced no Rails will be made there. A new wheel will be put in place at the earliest moment possible, and meanwhile other needed repairs will be made, for which the works would soon have been compelled to stop if there had been no accident.

**Railway Supplies.**—Manufacturers are advancing their quotations in consequence of the continued demand and the increased cost of raw material. Spikes are now held at $2.75 on cars here; Track Bolts, ¾ inch, Hexagon Nut, $3.50 @ $3.75; Splice Bars, Ordinary Angle, $2.25.

**Old Material.**—Small sales of Old Iron Rails have been made during the week at $27 @ $28, Chicago delivery. Of Old Car-Wheels a sale of 1000 tons was made at $21.50. Old Steel Rails are quoted at $24, but no sales are reported. For other material quotations are as follows, per ton of 2000 pounds: Railroad Shop, or No. 1 Forge, $26, Railroad Track, $24.50; Leaf Steel, $21; Coil Steel, $20.50; Locomotive Tires, $24; Cast Borings, $11; Machine Turnings, $14; Axle Turnings, $16; Boiler Plate, $18; Mill Iron, or No. 1 Wrought, $19; Sheet Iron, or No. 2 Wrought, $14; Machinery Cast, $16; Stove Plate, $13; Old Axles, $28.50.

**Nails.**—The demand is very good for the season, and prices are reported firmly, held at $2.55 for Iron, and $2.70 for Steel, with 10¢ off for carload lots. Messrs. Jones & Laughlins are endeavoring to close out their stock of Iron Nails, and are offering by circular a considerable number of kegs of Common, Fence, Brads, Barrel, Box, Fine, Slating, Finishing, Casing, Clinch and Lining at $2.15 rates, and other sizes of Fence, Barrel, Box, Finishing, Casing and Clinch Nails and Cut Spikes at $2.30 rates, net cash, 30 days. They are now making Steel Nails exclusively. The factory of the Calumet Iron and Steel Company have again resumed operations after a few weeks' stoppage for repairs.

**Barb Wire.**—The manufacturers are gradually closing up the weak places in their ranks, and the lowest places now quoted to jobbers are reported at 3.25¢ for Painted and 4¢ for Galvanized. They recognize the fact that they and not the jobbers must be the first to advance prices, but as yet they seem to fear the loss of some of their trade if they advance their rates to a point at which they can be undersold by jobbers who hold a stock secured at low figures. Jobbers quote 3.35¢ for Painted and ¼¢ more for Galvanized, which is being adhered to very generally.

**Hardware.**—Jobbers report general business so good that it interferes to some extent with preparations they would like to make for the regular spring trade. In many small articles of Shelf Hardware advanced prices are asked, and retail dealers are in consequence stocking up in anticipation of higher prices. Some lines of Heavy Hardware are still held at old figures, but the list is being reduced by the action of manufacturers from day to day. Among the latest articles affected in this way are Horse and Mule Shoes, which have been marked up 25¢ ℔ keg, now selling at $4.35 @ $4 50. Messrs. Marshall, Field & Co., who are putting in a line of Cabinet Hardware, bought 150,000 sets of Casters last week, of the Coleman Hardware Company. This is one of the largest single sales of Casters ever made in this country.

**Lead.**—Representatives of a number of shot towers met here on the 22d inst., with the view of establishing uniform prices, but it was found impossible to unite upon a basis of action, and they separated to continue ruinous competition with one another. Early last week large sales of Pig Lead were made in this market at 4.25¢, but toward the close of the week prices declined to 4.2¢, with nothing doing.

## Chattanooga.

Office of *The Iron Age*, Carter and Ninth Sts., CHATTANOOGA, TENN., January 24, 1887.

A matter of considerable importance to the railroad interests has been developed in the last few days. As is well known, quite a number of new railroad lines are being constructed through the South, and many more are being projected, with fair prospects of their being constructed. Many of these lines were receiving propositions for their material from Northern and Western mills "laid down." In many cases these propositions have been withdrawn and prices quoted only f.o.b. A few instances have occurred where the lines over which the material will go guarantee a maximum freight, and in many other cases the material will go by water transportation to the nearest railroad line, and thence over that line to destination. The passage of the Inter-State Commerce Bill by Congress has unquestionably created a good deal of embarrassment among those who have large amounts of heavy material to transport, as well as those lines who have been expecting to profit by the haul. Among the Pig-Iron producers of the South, who furnish by far the largest amount of pound freight, and who are almost wholly dependent upon transportation lines to put their goods into market, the situation is not regarded as of so much importance. Nearly all the furnaces are so situated that with short railroad hauls they are, or soon will be, accessible to water lines. In a few weeks the Pig Iron of the Birmingham districts can place their Pig at Sheffield by going over the Sheffield and Birmingham Railroad, a distance of only about 90 miles. At Sheffield it can be taken by boat to nearly all the markets of the great West. The same can be said of the products of the furnaces of the Chattanooga districts as soon as the difficulties of the Mussel Shoals are obviated.

**Pig Iron.**—There is nothing of particular interest to note, and it is very difficult to say whether prices have advanced or not. Sales have been made all the way from $17.50, spot cash, for No. 3 to $21, 60 days, for No. 1 at the furnace. It is a certain fact, however, that large round lots cannot be bought at these figures, which evidently shows that the producers are waiting for something to turn up. There are two embarrassing positions that large Pig-Iron producers sometimes find themselves placed in—the first is where they make sales of a large round lot to a purchaser for future delivery and prices advance several dollars per ton, and they are obliged to fill their contract at a lower price; the second is when they make a large sale for future delivery and prices go down several dollars per ton. In the latter case all sorts of excuses are brought forward by purchasers, who decline to receive and pay for the Iron. The least defect in grade or a few days behind time, and in some instances a downright cancellation of the order follows, which ends in a lawsuit or an adjustment by concessions in prices by the seller. Fairer weather than what prevailed in December has enabled the furnaces to increase their output to a considerable extent, and also enabled them to turn out a better grade of Iron.

**Hardware.**—A visit of your correspondent among some of the Hardware merchants of Cincinnati shows a very active condition of the trade. Warner & Co., of this city, and Orgill Bros. & Co., of Memphis, report a volume of business never before experienced, and the same may be said of every concern visited. Credits are being curtailed largely, and customers who cannot pay current monthly bills soon after the first of the month are considered undesirable, and their trade is not solicited. Wholesale merchants have certainly now the privilege of selecting their customers, and cannot be doing otherwise than a profitable business. Agricultural implements are in great demand, and the arrival of one steamer at the Memphis wharf with a consignment of 7000 plows is a very good indication that this trade will soon be in an active condition.

**Miscellaneous.**—A company was formed at this place last week, called the Chattanooga Split Wooden Pulley Company, for the manufacture of pulleys exclusively of wood, with the exception of four Bolts that clasp the pulley to the shaft. They were being made at the works of Willingham & Co. to a considerable extent but such has been the demand for them, that a company has been formed to engage exclusively in their manufacture, with a capacity of about 150 pulleys per day.

## Cincinnati.

CINCINNATI, January 24, 1887.

**Pig Iron.**—The market has continued very strong, and under a full pressure of steam the speed of the advance has been but little checked. The demand has continued unabated, but the furnaces have shown a disposition to book orders further into the future at now prevailing rates; they hope by this free policy to more fully satisfy present wants, prevent the income of foreign Iron, and induce a steadier market in the future. While the market has gained such a momentum that a further rise is not only possible, but probable, there are some indications of a turn in affairs. General business outside of the Iron interest has heretofore, or rather until the past few weeks, given the activity and the advance in Iron much support, but more recently there has been less animation, and money has accumulated at the larger banking centers, indicating a less active investment demand for borrowed capital in business enterprises. While the production of Iron is admitted to be large and the prospective supply is still larger, the consumptive requirements are steadily increasing, and, so far as Southern Coke Iron is concerned, the establishment of a number of mills and other manufacturing establishments in the Southern Iron field is cited as likely to consume a large portion of the output, and leave but comparatively moderate amounts to be put upon Northern and Eastern markets. This view, however, may be modified some by the probabilities of a less active demand for Southern Pig Iron from the North if Southern manufacturers come into the same field of competition with Northern mills and foundries, which is probable until the Southern resources are more fully developed. It would simply be a transfer of business to a more profitable field. Yet there are many contingencies which might arise, questions of transportation, legislation, &c., which might make or break sections and industries. One of the most important features in the Iron industry in the West during the week has been the letting of some large car contracts. The sales which have been accomplished by Cincinnati houses have been quite large in the aggregate, and there have been a few individual sales of magnitude. Among the more important may be noted one lot of 5000 tons Bessemer Iron sold to Indianapolis, equivalent to about $23 here; several thousand tons Lake Superior Iron. Two Southern furnaces are reported to have sold through Cincinnati upward of 9000 tons of mill and foundry grades, based upon 21.50¢ @ 22¢ for No. 2 Foundry, and 20.50¢ for No. 1 Mill for delivery extending beyond the summer months, some exceptional lots being booked for delivery close up to the first of next year. Besides this there have been moderate amounts sold at about these figures. The movement on old contracts is reported quite active by rail, and the opening of the river will allow the distribution of accumulated lots at various points. The prices for Pig Iron now current here for cash are about as follows:

| | | | |
|---|---|---|---|
| *Charcoal Foundry.* | | | |
| Hanging Rock, No. 1 | $24.00 | @ | $25.00 |
| Hanging Rock, No. 2 | 23.00 | @ | 24.00 |
| Southern No. 1 | 23.00 | @ | 24.00 |
| Southern No. 2 | 22.00 | @ | 23.00 |
| *Coal and Coke Foundry.* | | | |
| Ohio Soft Stonecoal, No. 1 | 21.00 | @ | 22.00 |
| Ohio Soft Stonecoal, No. 2 | 20.00 | @ | 21.00 |
| Southern Coke, No. 1 | 22.00 | @ | 23.00 |
| Southern Coke, No. 2 | 21.00 | @ | 22.00 |
| Southern Coke, No. 3 | 20.00 | @ | 21.00 |
| Ohio and West Pennsylvania Coke, No. 1 | 22.00 | @ | 23.00 |
| Ohio and West Pennsylvania Coke, No. 2 | 20.50 | @ | 21.50 |
| *Forge.* | | | |
| Strong Neutral Coke | 20.00 | @ | 20.75 |
| Mottled | 19.00 | @ | 19.50 |
| Southern Coke | 19.00 | @ | 20.00 |
| *Car-Wheel and Malleable Irons.* | | | |
| Southern Car-Wheel | 26.00 | @ | 28.00 |
| Hanging Rock, Cold Blast | 27.00 | @ | 28.00 |
| Hanging Rock, Warm Blast | 24.00 | @ | 25.00 |
| Lake Superior and Malleable | 27.00 | @ | 28.00 |

**Manufactured Iron.**—There has continued to be an active demand and a firm market at full prices, but without further change of moment. We quote: Bar Iron, 2¢; Charcoal Bar Iron, 3¢; Sheet Iron, Boiled, Nos. 10 to 27, 2¾¢ @ 3¼¢; Sheet Iron, Charcoal, Nos 15 to 25, 3¾¢ @ 4¼¢ ℔ lb.

**Scrap.**—There has been an active demand, but little has been obtainable. One thousand-ton lot of Cast Scrap was sold to Louisvilla at 75¢. Wheels and Rails have been strong and higher; with a good demand higher prices obtained. Rails are held at $30, and Wheels at $22 per ton.

**Nails.**—There has been a firm tone prevailing and a good jobbing demand, with sales on the basis of $2.70 ℔ keg for Steel, and $2.55 ℔ keg for Iron, for 10d to 60d, and other sizes at proportionate rates.

## Cleveland.

CLEVELAND, January 24, 1887.

**Iron Ore.**—The remarkably active inquiry for Bessemer Ore during the past six weeks has raised doubts in the minds of many dealers regarding the ability of the mines to supply the demands of the furnaces for next season. Not a few interested parties estimate that one-half of the total output of the Lake Superior Ore region has already been sold. There is no diminution in the demand. On the contrary, sales for the past six days were unusually heavy. For No. 1 Specular and Magnetic Ores, Bessemer quality, $6.50 @ $7.25 is quoted, and for Bessemer Hematites, $5.50 @ $6. The max mum quotations for these two brands of Ores represent the amounts realized for small quantities. For larger orders medium prices are obtained. It is said that 80,000 tons of Red Hematites were sold in this city last week for $5.45, April delivery. This active condition of the Ore trade is remarkable when it is remembered that transportation rates are still unsettled. Vessel men generally deny that any engagements have been made for next season. It has been extensively reported that prominent Ore men were to meet this week and fix upon a schedule of prices which they were willing to pay from Escanaba, Marquette, Two Harbors and Ashland, to Lake Erie ports. This meeting, has, however, not been held, although it may be within a week or two. Vessel owners maintain that the boom in the Pig Iron market and the advance in Iron Ore over last season's rates warrant a charge of $1.50 from Escanaba, $1.75 from Marquette and $2 from Ashland. Ore men would probably compromise on a 10 per cent. reduction. The general feeling is that the following quotations will cover the market for several weeks to come:

| | | | |
|---|---|---|---|
| No. 1 Specular and Magnetic Bessemer Ores | $6.50 | @ | 7.25 |
| No. 1 Specular and Magnetic Non-Bessemer Ores | 5.75 | @ | 6.75 |
| Red Hematite Bessemer Ores | 5.25 | @ | 6.00 |
| Red Hematite Non-Bessemer Ores | 4.75 | @ | 5.50 |
| Menominee Range Bessemer Ores | 5.25 | @ | 6.00 |
| Menominee Range Non-Bessemer Ores | 4.50 | @ | 5.25 |
| Gogebic Bessemer Ores | 5.50 | @ | 6.00 |
| Ores for Mill use | 5.75 | @ | 6.75 |

**Pig Iron.**—There has been a little more Iron in the market during the past week than during the preceding six days, and business has been proportionately more active. The inquiry continues far in excess of the quantity of Iron for sale. Although the general sentiment is adverse to further advances, every feature of the market indicates a continued upward tendency. The demand for Charcoal Irons has sent actual quotations up to a range of $23.50 @ $25. For No. 1 Strong Foundry Bessemer Iron $22.20 @ $22.70 is quoted, and for No. 1 American Scotch, $22.50 @ $22.75. All the mills complain of a lack of coke and fear that this want may continue until Iron takes a tumble.

## Louisville.

LOUISVILLE, KY., January 24, 1887.

**Pig Iron.**—The market closed on another very active week at $20 @ $20 50 for No. 1 Mill and $20 for No. 2 Mill. There are still some lots of No. 1 Mill on the market at $20.50, but nearly everything in the shape of No. 2 Mill at $20 has been sold. Nos. 2 and 2½ Foundry Irons have also met with large sales at full figures. Silver Gray Irons have been in active request and nearly everything offered at reasonable figures has been sold, ruling price being $20.50 for Medium Silver Gray. Car-Wheel Irons have also been in good request at full figures. A large number of Southern furnaces are behind in their deliveries, and, as consumers are generally using much more iron than they provided for, it has created a very large demand for spot delivery Iron, as well as for future delivery. The large sales of Foreign Iron in the West seems to have created no want of confidence in the market, as American Irons at the market prices are still considerably cheaper than Foreign Irons of equal quality can be laid down here. Some of the Southern furnaces are still making an effort to check the advance by remaining in the market, even though largely sold ahead, but the active demand for Spot delivery Iron for immediate want, and for future delivery iron to cover the contract, continue to advance figures. We quote for cash as below:

| | | | |
|---|---|---|---|
| *Pig Iron.* | | | |
| Southern Coke, No. 1 Foundry | $22.00 | @ | $22.50 |
| " No. 2 " | 21.00 | @ | 21.50 |
| " No. 2½ " | 20.50 | @ | 21.00 |
| Hanging Rock Coke, No. 1 Foundry | 22.00 | @ | 22.50 |
| Southern Charcoal, No. 1 Foundry | 22.00 | @ | 23.00 |
| Silver Gray, different grades | 20.50 | @ | 21.50 |
| Southern Coke, No. 1 Mill, Neutral | 20.00 | @ | 20.60 |
| " " No. 2 " | 20.00 | @ | * |
| " " No. 1 " Cold Short | 19.50 | @ | 20.00 |
| " Charcoal, No. 1 Mill | 21.00 | @ | 21.50 |
| White and Mottled, different grades | 18.00 | @ | 19.00 |
| Southern Car-Wheel, standard brands | 27.00 | @ | 28.00 |
| Southern Car-Wheel, other brands | 25.00 | @ | 26.00 |
| Hanging Rock, Cold-Blast | 27.00 | @ | 28.00 |
| " " Warm-Blast | 23.00 | @ | 24.00 |

* ———

W. B. BELKNAP & CO., Louisville, Ky., report as follows, under date of January 24, 1887: The market continues so strong and advances have been so rapid that the constitutional bulls admit that the prices have got away with them. Certain it is there is an immense demand for Iron and Nails and heavy stock generally. The action, however, at Pittsburgh this week in fixing the card at 2¢ rate instead of anything higher we think must have a salutary effect in checking the wild predictions of those who have been wont to declare that we should see a repetition of '79 and '80. Imports have largely increased, and the amount of Iron contracted for seems to indicate still further enlargement in this direction. There has been a good deal of talk over the purchase by the St. Louis Pipe Works of 5000 to 10,000 tons of English Pig, which is only an indication of what will happen generally if prices are forced up much higher in this country. Even those who, while advocating high protective tariffs themselves have been quietly importing large quantities of Wire Rods, are now adverting publicly to the disastrous consequences of too great importation of foreign stuff. The volume of what might be called the regular spring trade—*i. e.*, the trade which comes in from consumers and small buyers throughout the country, is not excessive; in fact, we doubt if it is as large as has frequently been the case in former years; but wherever the buyer has read the signs of the times, and, speculatively inclined, there purchases have of course been increased.

*Bar Iron*—While nominally 2¢ card rate, is selling at higher figures. The large orders placed here by the Ohio Falls Car Works and other considerable consumers have loaded the mills down, and prices are now made ranging anywhere from $2.10 to $2.25. There is little trouble in realizing these figures provided one has the Iron that the buyer wants.

*Sheets*—are very strong and in good demand. It seems singular that just at the close of the season, when we should naturally look for a falling off in the demand for light Sheet, there is more call for it than at any time during the past four or five months. This is attributed to the large purchases made by the corrugating and roofing companies who reap the benefit of increased construction.

*Steel.*—The advanced price of ordinary grades of Steel have caused corresponding advances in Tire, Machinery, Plow Steels and Finished Plow Shapes. These latter are now moving freely, the large factories here having their hands full of orders.

*Nails*—Are moderately active, but strong at new figures. $2.50 at the mill for Steel Nails is as low quotation as seems obtainable. Iron Nails about 20¢ ℔ keg lower. Wire Nails have advanced with the advance in Wire and that of Cut Nails. They are now held at $3.50 rate.

*Wire.*—The sudden resolution of getting better prices seems to have been taken at a fortunate time for the Wire manufacturers, judging by the readiness with which it has been maintained. Plain Wire is in large request and Barb Wire is beginning to move freely. Full prices are asked and obtained for both.

## Detroit.

CHARLES HIMROD & CO., dealers in Pig Iron, Detroit, Mich., report, under date of January 24, 1887, as follows: To give a comprehensive idea of the state of the market at present would consume more space than probably would be allowed us. Deals and offers for large amounts are constantly being made, which have the tendency to make the market still further advance, and these advances are not nominal in any way, but based upon actual transactions. Quite a large quantity of Lake Superior Charcoal Iron is going out from our market at $25, and we know of no Iron that could be purchased for less than this. In fact offers on all kinds of Iron, if the price is anywhere within reason, are promptly taken up, buyers making larger purchases at every rise. Heading the strong element is Lake Superior Charcoal Iron, and it is now presumed by many that $30 will shortly be reached. For cash we quote as follows:

| | | | |
|---|---|---|---|
| Lake Superior Charcoal, all numbers | $25.00 | @ | $26.00 |
| Lake Superior Coke, All Ore | 23.50 | @ | 24.50 |
| Lake Superior Coke, Cinder Mixed | 22.00 | @ | 23.00 |
| Standard Ohio Blackbands | 23.50 | @ | 24.50 |
| Southern No. 2 | 22.50 | @ | 23.00 |
| Southern Silvery | 21.00 | @ | 22.00 |
| Jackson County, Ohio, Silvery | 21.00 | @ | 22.50 |
| American Old Iron Rails | 28.00 | @ | 29.00 |
| Old Wheels | 22.00 | @ | 23.00 |

The DeKalb *Review* prints the following: "A few months ago Mr. Jacob Haish, manufacturer of the famous "S" barb steel fence wire, commenced the manufacture of a new style of wire which he calls the "Eli." It differs in a slight degree from the sample under which Mr. Haish was granted a license. Messrs. Washburn & Moen, of Worcester, Mass., claim the Eli is an infringement of the Glidden patent, which they own, and for which they have brought suit in the United States District Court at Chicago, before Judge Blodgett, the suit being now pending. Mr. Haish disclaims infringement. The case has been postponed three times since it was instituted—once on account of press of business before the court and twice by request of the plaintiffs."

# Trade Report.

## General Hardware.

The market is characterized by a good demand, especially from the large trade, the retailers buying about as usual but not generally anticipating their wants. Prices, especially for heavy goods, are decidedly firm, and a number of further advances are announced. In some lines, with the moderate stocks on hand when the demand set in, there is some delay in getting the goods, and for some kinds of Hardware for which the demand, owing to the gradually increasing prices, has been exceptionally large, the manufacturers have orders which will keep them occupied for some time. The general line of Shelf Hardware remains without change, except that in sympathy with the prevailing tone of the market prices are more rigidly adhered to.

BARB WIRE.

Manufacturers have advanced the price of Four-Point Galvanized ⅛ cents to 4¼ cents for carload lots, February and March delivery, the advance being mainly due to higher prices for Wire Rods, which close today at $42.50, or $7 above the lowes point last summer and fall. The market is fairly active. Barb Wire for export has also been advanced ⅛ cents per pound.

NAILS.

Manufacturers have advanced the card rate to $2 40 for carload lots of Iron Nails, and $2.50 for lots from store, with 15 cents added for Steel in the territory tributary to the New York market. The majority of sellers are holding and selling at these figures, but they have not become quite general as yet, some Nails being still obtainable at $2.30. The advance, however, is warranted by the high prices for raw material, and the slight irregularity noted is liable to disappear at very short notice.

TINWARE.

The Central Stamping Company, of New York, have for some time been engaged in preparation of new and thoroughly revised list prices for the entire line of the goods of their manufacture. From an advance copy of their new list which has been furnished us, we observe that the list prices are materially advanced, and it is understood that the discount, which has not yet been finally determined upon, will be correspondingly large. At this writing it appears that the new prices are not materially different in their general range from those which have prevailed for some time. Recognizing the desirability of having a uniform list and a mutual understanding, the Central Stamping Company have been in conference with the other manufacturers of Tinware, and at a recent meeting held in this city, at which almost every manufacturer of this line was present or represented, the Metal Manufacturers' Association was organized with the following officers: David H. James, New York, president; W. H. Matthai, Baltimore, secretary, and John C. Milligan, Brooklyn, treasurer. It was also decided to adopt as a uniform list the Metal manufacturers' list, which is the same as that of the Central Stamping Company alluded to above. It was further agreed by the associated manufacturers that they would not sell below certain specified prices, the understanding being that a general discount would be determined at an early day by mutual agreement. This action on the part of the manufacturers is regarded as of special significance and importance, and it is considered as not improbable that the outcome will be the formation of a strong organization for the regulation of business in these important lines. In this view, while prices may be referred to as substantially the same as heretofore, the market is characterized by a more firm feeling, and while no immediate advance is announced by the manufacturers it is considered likely that more stability will be given to quotations, with the probability, if the present plans are carried out, of the ultimate announcement of somewhat higher prices.

MISCELLANEOUS PRICES.

The following is the revised price list of Fry Pans and Stove Skillets manufactured by Sidney Shepard & Co., Buffalo, N. Y. Stove Skillets are stated to be the same as Fry Pans, except that all sizes have 9½-inch handles. The list is subject to a discount of 65 and 10 per cent.

*Polished Iron.—Deep-Lipped Fry Pans.*

| | Per dozen. |
|---|---|
| No. 1, 8⅛ inches | $3.75 |
| No. 2, 9 inches | 4.35 |
| No. 3, 9⅞ inches | 4.75 |
| No. 4, 10 inches | 5.25 |
| No. 5, 11¼ inches | 6.00 |
| No. 6, 12 inches | 7.00 |
| *Deep-Lipped Stove Skillets.* | |
| No. 11, 8⅛ inches | 3.75 |
| No. 12, 9 inches | 4.35 |
| No. 13, 9⅞ inches | 4.75 |
| No. 14, 10 inches | 5.25 |
| No. 15, 11¼ inches | 6.00 |
| No. 16, 12 inches | 7.00 |

E. Jenckes Mfg. Company, Pawtucket, R. I., represent in their price list and illustrated catalogue, to which we briefly alluded in our last issue, a line of Bright Wire Goods, Brass Cup Hooks, Spring Cotters, Flat Spring Keys, Belt Hooks, Mill Wire Goods, Ring Travelers and Light Hardware. The following discount sheet which accompanies the list will be of interest, not only for the information it gives in regard to prices, but also as showing in detail the line of goods represented in the catalogue:

| | Per cent. |
|---|---|
| Bright Wire Goods | 75&10* |
| Brass Cup Hooks | 75&10 |
| Iron Cup Hooks | 75&10 |
| Brass Braced Cup Hooks | 75&10 |
| Brass Braced Screw Hook | 75&10 |
| Braced Wire Screw Hooks | 45&10 |
| Wrought Screw Hat Hooks | 60&10 |
| Bird Cage Hooks | 60&10 |
| Malleable Hooks and Eyes | 66⅔&10 |
| Brass Hooks and Eyes | 60&10 |
| Brass Hooks without Eyes | 60&10 |
| Brass Hooks and Pins | 60&10 |
| Wrought Meat Hooks, to drive | 70&10 |
| Tinned Meat Hooks, to screw | 80&10 |
| Tinned Shutter Rings | 50 |
| Hitching Eyes, with Ring | 66⅔&10 |
| Hammock Eyes | 66⅔&10 |
| Hammock Hooks, with Plate | 60, 10&10 |
| Hammock Hooks, with Screw | 60, 10&10 |
| Wire Drive Hooks | 50&10 |
| Coppered Screw Hooks | 70&10 |
| Ceiling Hooks | 55&10 |
| Chandelier Hooks | 45&10 |
| Chandelier Hooks | 55&10 |
| Spring Cotters, to No. 4 inclusive | 60&10 |
| Spring Cotters, No. 1 and larger | 50&10 |
| Flat Spring Keys | 50, 10&10 |
| Belt Hooks | 80 |
| S Hooks | 55&10 |
| Factory Bright Wire Goods, except 700 to 712, and 1709 to 1712 | 50* |
| Pontiac Guides | 25 |
| Ponemah Guides | 40 |
| Common Sense Guides | 25 |
| Nashua Guides | 40 |
| Spinning Rings | 10 |
| Ring Travelers | 40* |

* Net cash 30 days.

At the meeting of the manufacturers of Strap and T Hinges held in this city last Wednesday, it was decided unadvisable to make any advance in prices, and quotations accordingly remain without change.

At a meeting of the New York and Boston importers of French Window Glass held in this city on the 18th inst., a revised price list was adopted, to take effect January 20. This new list is subject to a discount of from 70 and 10 to 70 and 10 and 5 per cent.

The Burden Iron Works, Troy, N. Y., and the Rhode Island Horse Shoe Company, Providence, R. I., announce an advance of 25 cents per keg in the price of Horse, Mule and Snow Shoes.

A Tack manufacturer in the West writes us alluding to the general tendency toward an advance in Tacks, especially in view of the increased cost of iron and tin. They also refer to the fact that in their opinion all the companies lost money the past year. They and others are intending to pursue the policy of restricting production, and are expecting for the rest of the winter to run only half time.

We give below the correct prices of goods erroneously priced, or omitted, in the Handled Hammer List, published in our last issue:

| | |
|---|---|
| 7 ounce Plain Eye Nail and Plain Eye Bell Faced Hammer | $6.25 |
| 12 ounce Tinners' Riveting and Paneing Hammers | 6.35 |
| 1 pound 8 ounce Tinners' Riveting and Paneing Hammers | 7.75 |
| 1 pound 12 ounce Tinners' Riveting and Paneing Hammers | 8.50 |
| 2 to 2½ pound Horse Shoe Turning Hammers, Mallory Pattern | 34.00 |

Payne, Pettebone & Son, Wyoming, Pa., issue a revised list of their Shovels, Scoops, &c., which is subject to a uniform discount of 30 per cent. They direct special attention to their Patent Protected Strap Shovel, the special features of which are explained, and also allude to the advantages possessed by their Scoops from the manner in which they are constructed.

The manufacturers of Augers and Bits will soon hold a meeting, to confer again in regard to the advisability of making an advance in the goods.

The manufacturers of Axes held a meeting in this city last week, which was largely attended. In view of the unremunerative prices that have for some time prevailed for Axes, the necessity of making an advance was recognized, and the result of the meeting was the putting up of the price 25 cents per dozen. This advance, which will be recognized by the trade as exceedingly moderate, will doubtless be cheerfully accepted, especially in view of the fact that the market is firm, and a further advance is not improbable.

Still another advance has been made in the price of Chain, affecting not only Coil, but also Traces and Fancy Chains. These latter lines are now sold at prices which will not permit the jobbers to sell them with satisfactory profit at much better than discount 50 and 10 per cent.

The manufacturers who have accepted the new Hammer list are generally quoting the goods at discount 40 per cent. to the retail trade. Much satisfaction is expressed with the list as determined on, and while securing, at the discount announced, a satisfactory advance to the manufacturers, it will serve the convenience of the trade, as the quotation of goods is simplified, and a better classification secured.

No change has yet been made in Cabinet Locks, but the price is firmly maintained, and the opinion expressed that an advance in the near future is to be looked for.

Planes are exceedingly irregular and much demoralized, and with the existing competition lower quotations have been developed since our last issue.

The Scythe market is not in a satisfactory condition, and the association prices are entirely nominal.

Some of the manufacturers of Shovels and Spades are quoting slightly higher prices, in view of the increased cost of material and the increased demand.

Humason & Beckley Mfg. Company, New Britain, Conn., and 80 Chambers street, New York, issue a revised discount sheet, January 20, as follows:

| Page. | Disc. per cent. |
|---|---|
| 6-13, Hammers (List of Jan. 15, 1887) | 40 |
| 13, Nail Sets | 50&10 |
| 13, Box Openers | 50&10 |
| 13, Screw Drivers | 60&10 |
| 13, Screw Driver Bits (No. 17 void) | 50&10 |
| 13A, Screw Driver Bits | 40&10 |
| 13A, Pliers | 50 |
| 14, Box Hooks | 50&10 |
| 14A, Cotton Hooks | 50&10 |
| 14A, Hay Hooks | 50&10 |
| 14A, Box Scrapers | 40&10 |
| 15, Saw Sets | 20&10 |
| 16, Marking Awls, with Reels | 60 |
| 16, Marking Awls, (No 6 void) | 60 |
| 16, Belt Awls | void |
| 16, Pliers (See page 13A) | void |
| 16, Saddlers' Claw Tools | void |
| 16, Belt Punches | 40 |
| 17, Can Openers | 60 |
| 17, Tack Claws | 50&10 |
| 17, Mincing Knives (Nos. 1 and 3 void) | 50 |
| 17, Ice Picks | void |
| 17, Kitchen Knives | void |
| 18, Cleavers (Nos. 4, 5 and 6 void) | 40 |
| 18, Butter and Cheese Tryers | 25 |
| 19, Bolts (Nos. 53 to 58 void) | 70 |
| 20, Rail Screws | 70 |
| 20, Malleable Hooks and Eyes | 70 |
| 20, Cupboard Latches | 50&10 |
| 22-27, Bright Wire Goods, list of June 25, '83 | 75&10 |
| 27, Meat Hooks, screw, list of June 25, '83 | 80&10 |
| 27, Stair Rod Eyes, list of June 25, '83 | 75&10 |
| 28, *Staples and Hooks with Staples | 80&10 |
| 29-30, *Hasps and Hasps and Hooks with Staples | 80&10 |
| 30-31, *Rings and Rings with Staples | 80&10 |
| 31, *Awning Hooks | 80&10 |
| 32&32A, * Meat Hooks | 80&10 |
| 32A, Lowe's Bow Pins | 70 |
| 33, Cattle Leaders | 75 |
| 33, Bow Pins, Nos. 3 to 7 | 70 |
| 33, Bow Pins, Nos. 1 and 2 | 60&10 |
| 34, Bull Rings | 70&10 |
| 34, Bull Punches | 25 |
| 34, Tobacco Needles | 50 |
| 34, Hoof Cleaners | 20 |
| 35-47, Cork Screws | 40 |
| 48, Champagne Openers | 40 |
| 48, Nut Crackers (see page 48A) | void |
| 48A, Nut Crackers (change list No. 7, $6; change list No. 12, $9) | 40 |
| 48, Key Rings | 33⅓ |
| 49-86B, Pocket Cutlery, list of Jan. 1, 1886 | 33⅓ |
| 88, Tuning Forks | 10 |
| 88, Triangles | 60 |

* List of January 12, 1887.

With this discount sheet they send out also new pages for insertion in their catalogue, which give the revised list prices on Hammers and on Wrought Iron Goods.

ITEMS.

The business heretofore conducted by George Griffiths, manufacturer of Shovels, Spades and Coal Hods, Philadelphia, will be continued under the firm name of George Griffiths Company, in which George Griffiths and Louis Reichner, Jr., are associated.

The Gooch Freezer Company, Cincinnati, Ohio, issue a price list of their Peerless and Giant Freezers. They state that they are permanently located in their new buildings, which have been fitted up with improved machinery, thus facilitating their increasing trade, so that they can ship orders of any size with promptness and dispatch. They allude also to the improvements which have been made from year to year in their goods.

The trade will observe on page 19 the announcement of a large trade sale of Hardware by Haydock & Bissell, auctioneers, Nos. 12 Murray street and 15 Park Place, on Wednesday and Thursday of next week. This sale will include, we are informed, large invoices of Heavy and Shelf Hardware, Edge Tools, Shovels and Spades, Manure Forks, Trace Chains, Log Chains, &c., and is worthy the attention of merchants.

Fred J. Myers Mfg. Company, Covington, Ky., invite the attention of the trade to their advertisement of Family Flour Sifters upon page 26. From the announcement made therein it will be noticed that they have purchased the patents and all rights vested therein of the Hunter, Electric Light, Flour-Piece and Eclipse Sifters from the Hunter Sifter Mfg. Company, of Cincinnati, Ohio. A building immediately north of their present premises, four stories high, with a frontage of 40 feet on Madison avenue and extending to the rear 150 feet, has been purchased, and will be fitted up with all conveniences for the manufacture of these goods. The company state that it will be their aim to keep up the high standard these goods have attained, and that improvements will be made whenever it is possible.

Brown, Hinman & Huntington Company, Columbus, Ohio, in their catalogue for season 1886-87, represent fully their line of both Wood and Steel Goods, including Scythe Snaths, Grain Cradles, Forks, Hoes, Garden Rakes, Potato Hooks, &c. These different goods, with others, are illustrated with descriptions and list prices. Grain Cradles are listed with either ring fastenings or the Eureka Patent Fastenings. In the description given of the latter, the company call attention to its advantages, and describe it as doing away with the old ring fastening, for which a patent loop and nut scythe fastening is substituted, and in addition thereto an adjustable socket fastening, by which the whole cradle head and points of fingers may be set at any angle desired, and by which the head may be easily attached or detached. Besides their well known line of Forks, Hoes, Rakes, &c., they illustrate a variety of Weeding Rakes and Hoes, of which seven numbers are made.

A. R. Thompson, Peoria, Ill., is about to issue for the use of mechanics and not of the trade a price list of Carpenters', Machinists' and Amateurs' Tools, which will doubtless be of much service to those for whom it is intended. The catalogue is a fully-illustrated pamphlet of 100 pages, which, besides the lines indicated, represents an assortment of Builders' Hardware, Carving Tools, Lathes, Scroll Saws, Fancy Woods, Drawing Instruments, Electric supplies and other miscellaneous goods, of which descriptions, list prices, and in nearly all cases illustrations are given. In the introductory remarks Mr. Thompson alludes to his experience of 20 years in supplying mechanics' tools, as enabling him to present in this catalogue the most approved quality of machinery and tools, which he thoroughly warrants, expressing the opinion that many good mechanics are unable to procure such tools as they desire, either from ignorance on the part of local dealers who do not know what a good tool is, or from fear that they cannot sell a good article. He also refers to the use the catalogue may be to amateurs of a mechanical or scientific inclination, who from it may derive a familiarity with machinery, tools, &c., which will be useful in after life. To such, but more especially to carpenters and machinists, the catalogue will be of interest. We take pleasure in alluding to it in these columns, as an instance of commendable enterprise, which will be perhaps suggestive to other merchants who in a similar way may desire to extend their trade.

C. Aultman & Co., Canton, Ohio, issue pamphlets devoted to the Buckeye Harvesting Machines and the line of steam Threshing Machinery which they manufacture. These pamphlets are fully illustrated and go with some detail into the construction and advantages of the machines.

Timothy B. Hussey, North Berwick, Me., issues an exceedingly tasty calendar for 1887, and in connection with it sends out a descriptive catalogue of the line of the more important Agricultural Implements which he is manufacturing. The catalogue is devoted to Plows, Harrows and Cultivators, which are alluded to as his specialties, and their special features are described with testimonials as to their merit.

R. Armiger & Son, Refrigerator manufacturers, Baltimore, Md., will remove their office and salesroom February 1, from 10 South Charles street to 7 East Lombard street.

On the 18th inst., at an enthusiastic meeting of the leading citizens of Earlville, Ill., an organization, to be known as the Earlville Industrial Association, was formed, having for its object the promotion of the manufacturing and business interests of the city. The officers as elected were: William R. Haight, president; A. B. Breese, vice-president; Charles Hoss, secretary, and J. J. Pool, treasurer. An executive committee composed of L. Hiscock, R. O. Dupee, J. R. Kinkead, H. W. Sanders and J. J. Pool was also elected. Earlville is desirably situated on the line of the Chicago, Burlington and Quincy Railroad for the location of manufacturing enterprises, and the association is now prepared to offer liberal inducements to those seeking new fields.

A fire at Kokomo, Ind., destroyed a great deal of valuable property on the 19th inst., among which was the double Hardware store of Pickett & McNeil. The stock was insured, but the amount to be received from this source will of course fall far short of repairing the loss caused by the fire and the consequent interruption to business.

The L. M. Rumsey Mfg. Company, St. Louis, Mo., have issued their illustrated catalogue and price list for the current year, designating it as No. 40. It is devoted to Agricultural Implements, Barbed and Plain Fence Wire, Lead Pipe and Sheet Lead, Gas-Pipe and Fittings, Beltings, Hose, &c., Iron and Wood-Working Machinery and Gas and Steam Fitters', Plumbers' and Machinists' Tools and Supplies. This compact and well-arranged catalogue has 635 pages, and represents a very complete assortment of the lines of goods to which it is devoted, and is, our readers will observe, of larger size than the former catalogue, indicating the continued growth of theb usiness of the company. They allude to their manufacturing facilities as having been greatly increased, and to their stock of goods as the largest of its kind in the United States. The company have, it will be borne in mind, other catalogues adapted to the wants of Hardware dealers, machine shops, founders, railroad companies, steam and gas fitters, Pump dealers, &c.

C. M. Cole, Barnesville, Ohio, announces the death of William J. Hyde, making appreciative reference to his high character and worth. Mr. Hyde was a young man in his 22d year, and the respect and affection in which he was held are evidenced by the tribute which is thus paid to his memory.

Charles Harrison & Co., 16 West Fourth street, New York, issue their 1887 illustrated catalogue of Water Closets, Flushing Rim Hoppers, Self-Closing Faucets, Pumps, &c., of which a variety of styles and patterns are represented.

The Bailey Mfg. Company, Hartford, Conn., issue circulars describing Bailey's Patent Copying Machine, and send out samples of its work.

The attention of the trade is directed to the attractive advertisement on page 35, in which the leading articles embraced in the line of Bean's Police Equipments, manufactured by John P. Lovell's Sons, Boston, Mass., are illustrated. The manufacturers call attention to the completeness of the assortment of Police Hardware thus offered to the trade, as well as to the special advantages which are claimed for the different goods. Among the articles to which they call particular attention are the No. 1 or Patrolman's Handcuffs; the Sole Leather Police Clubs, to the very large sale of which they allude; the improved Chain Twisters, Giant Handcuffs and Police Calls. But our readers will be interested also in the other goods, full descriptions of, which are given in circulars issued by the manufacturers.

C. M. McClung & Co., wholesale dealers, in Hardware and Cutlery, Knoxville, Tenn., issue a descriptive price list for the spring trade, which is devoted to Plows, Hoes, Hames, Chains, Horse Collars, Double Shovels, Plow Stocks, &c. They also call special attention to their Bissell Chilled Plows, a line which they have been handling for only 6 months, but to the sale of which they allude as especially satisfactory.

The Johnson Manure, Pulverizer and Spreader is fully described in an 8-page circular issued by the Newark Machine Company, Columbus, Ohio, by whom it is manufactured. It is alluded to as meeting the want for a simple, inexpensive, and at the same time effective machine, which will not only serve to lighten what is a disagreeable and laborious portion of farm work, but perform it in such a way as to give the best results from the manure.

At a special meeting of the stockholders of the Ohio Butt Company, held at Chicago on the 22d inst., it was voted to change the name of the company to the Coleman Hardware Company, the change to go into effect at once. The business will be continued as heretofore, with factories at Morris, Ill., and Chicago office at Nos. 51 to 55 Dearborn street, and the company announce that they will spare no effort to merit a continuance of the patronage accorded to them in the past. The officers of the company are J. G. Coleman, president; D. Nickel, vice-president and superintendent, and W. A. Parker, secretary. Mr. Coleman had been for many years the president of the Ohio Butt Company.

Marshall Field & Co., prominent dry goods merchants of Chicago, have added a new department. They are now laying in a complete stock of Cabinet Hardware.

Packard & Co., Greenville., Pa., have issued, under date January, 1887, their first illustrated catalogue, representing the leading lines which they handle. It is a well-arranged volume of 520 pages, and represents an assortment of Shelf and heavy Hardware and Cutlery, Wagon and Carriage Hardware and Woodwork, Harness Whips, Sadlery Hardware, &c., giving some attentention to Paints, Oils, Varnishes, Glass, Putty, &c. The aim of the firm in compiling this work has been to include the most favorably known goods and to retain the manufacturers' numbers and list prices, a feature which will be appreciated by their customers. The index is exceptionally complete and satisfactory, and is so full and well arranged as to facilitate the finding of all goods represented in the catalogue. This volume, besides being an evidence of the enterprise of the energetic house that issues it, will be found doubtless to contribute to the convenience of the trade in Western New York, Pennsylvania and Ohio, where the customers of the firm are, we believe, principally located.

Tower & Lyon, 95 Chambers street, New York, have become proprietors and manufacturers of the line of Stephens' Vises, so well known to the trade, and formerly manufactured by Melvin Stephens. These Vises, which, it will be remembered, are a combination of the cam and toggle joint, are made in a variety of patterns and sizes, and attention is called to their strength, durability, firm hold and quick work. Together with these goods, Stephens' Planer Chucks, with self-adjusting taper attachment, are made, and also a line of Jewelers' Vises, Jewelers' Anvils, Table Clamps for jewelers' use, &c.

E. S. & F. Bateman, Spring Mills, N. J., have issued their annual catalogue, edition of 1887, in which their line of goods is illustrated and described. It represents many articles which are familiar to the trade, but in addition to these are some new implements which they have put on the market since their last catalogue was issued, among which may be mentioned their Diamond Tooth Harrow and Cultivator. The teeth of this implement are of steel, diamond-shaped, with a small cultivator tooth forged on one end. The various positions in which the teeth can be set, adapting it for different purposes, are illustrated. The firm are also putting on the market this season the Advance Fertilizer Drill, which is of new construction, and possesses special features which are referred to as of value. Prominent among the goods represented in this pamphlet are the Iron Age goods, which are well known to the trade.

Job T. Pugh, 3114-3120 Market street, Philadelphia, issues a new price list of the line of Augers and Bits of which he is the manufacturer. It represents Auger Bits and Carpenters' Augers, Hand Boring Machine Augers, Car Bits, Post and Millwright Augers, Chisel Bits, Machine and Countersink Bits and others. In the introductory notice attention is called to the fact that the manufacture of these Augers and Bits was begun more than 100 years ago, and the claim is made that it is thus the oldest establishment in this line in this country. At the same time attention is called to the quality of the goods, no expense being spared in the production, the finest material being used and the goods being made by hand. The following statement is made in regard to

the "Black Twist Auger," which besides the information it gives in regard to the goods, will be of some interest as giving the history of what is no doubt one of the oldest Hardware manufacturing establishments in the country:

During the last half of last century the Double-twist Auger was discovered by Benjamin Pugh Boring in wood has been done through all time, but the discovery of the double twist proved to be of great value, as deep long holes could be bored without removing the auger, the twist always carrying the chips to the surface. In those olden times the feature of any manufacturer was the excellence he could produce in quality, and, as nearly everything was made by hand, it did not receive the beautiful polish that, at the present day, adorns the cheaper and inferior implements. In preference to a polished surface, the discoverer and manufacturer of these Double-twist Augers made the twist black and unpolished. It thus showed the handwork that had been put on it, and it is still a well known fact that hand-made tools are far superior in quality and workmanship to all others. As manufacturing industries increased, Augers began to be made with a high polish and beauty, but the consumer soon found they were of inferior quality, and would inquire for the Black Twist Auger, knowing it to be the old fashioned, genuine kind, and to-day it is called for where the name Pugh has been lost. Thus the Pugh Auger assumed for itself the name of "Black Twist," and it has always retained it as a trade mark.

Sweet & Clark Mfg. Company, Troy, N. Y., issue their 1887 catalogue, which represents their line of Curry-Combs, Curry and Horse Cards, Boring Machines, Anchor Snap Hooks, Whip Racks, Door Fasteners, Fast Shackle Scandinavian Padlocks, Garden Trowels and other Hardware specialties.

Thomas H. Marks, Baltimore, Md., issues a circular describing the Alaska Dry-Air Refrigerators, with sizes and list prices.

The Detroit File Works, of Detroit, Mich., announce to the trade that they have increased their facilities for manufacturing their well-known Files and Rasps, and will make special efforts the coming season to reach the Eastern and Soutnern markets. They have placed the sale of their goods in the hands of W. H. Quinn & Co., 99 Chambers street, New York City, who will represent them exclusively in this territory.

Our readers will observe the advertisement on page 28, in which the Terry Mfg. Company, Horse Heads, N. Y., illustrate their Leader Anti-Friction Door Hanger, of which they also give the list prices.

H. D. Edwards & Co., Detroit, Mich., issue a circular describing the Ideal Hose Truck, the special feature of which is that it will automatically wind up the hose as the Truck is pushed over it lying on the ground, thus obviating the handling of wet and dirty hose. They also describe the Medal Garden Hose Truck, which is put on the market to meet the demand for a cheap reel, and is described as neat and strong.

The Mallory-Wheeler Company, New Haven, Conn., and 64 Reade street, New York, have just issued in their usual clear and satisfavtory form the revised list prices of Locks, Knobs, &c., of which they are manufacturers. The discount on all goods on their list except Padlocks and Padlock Keys is stated to be 60 per cent., while the discount on Padlocks and Padlock Keys is announced as 70 per cent., there being in both cases a discount of 2 per cent. for cash within 30 days of date of invoice. With the list are sent out a large number of extra pages which are intended to be pasted in their 1882 catalogue. These pages refer to new goods recently added, revised list prices, &c.

Our readers will observe the advertisement on page 31, in which formal announcement is made that the Livingston Horse Nail Company, 104 Reade street, New York, are agents for F. H. Beecher, Seymour, Conn., manufacturer of the well known brand of French, Swift & Co. Augers, Bits, and Harness Snaps.

The Essex Horse Nail Co., Essex, N. Y., issue a neat calendar calling attention to their line of Finished Horse Nails, and the fact that J. C. McCarty & Co., 97 Chambers street, New York are agents.

The Dille & McGuire Mfg. Company, Richmond, Ind., issue for the coming season a price list of their Richmond Star Lawn Mower, which, besides descriptions and list prices, contains a number of testimonials from some leading houses in the trade and other parties who are familiar with the machine. They also issue circulars describing the Richmond Star Double Drive, which is alluded to as possessing most of the advantages found in their Star Lawn Mower, and, as the name indicates, has two driving wheels. It is intended for use in parks, public lawns, &c., where a large Mower is required. They also describe in a separate circular the Richmond Diamond Lawn Mower, which is put on the market to meet the demand for a cheaper Mower than the Star. In directing the attention of the trade to these different machines, they send out a variety of printed matter and some striking advertising cards.

Bruce & Cook, 186–190 Water street, New York, send us their calendar for 1887, which is similar in design to the one issued last year by them. With the calendar they make the following reference to the business of the past year:

The disturbances of the labor agitation have been the only events that have seriously marred the healthful working of the industries of our country in the year past. It is to be deeply regretted that our wage earners and their leaders, while seeking for themselves that recognition and fellowship in social and industrial life which is man's heritage among his brethren, should be so forgetful of the element of personal character, which is its only true basis. Mental and moral elevation command respect, and to stop the waste of strikes and drinking usages would be better in financial results than all the increase of wages asked for. A true man and a thrifty household are capitalists from the start—independent, self respecting and respected. Notwithstanding the agitation of these questions in the spring, the year has been a busy one, and the extent of the demand for immediate consumption in all lines of production gives good evidence that it has been a year of widespread prosperity, and we are gratified to believe the promise for the new year is even more encouraging. We hope for ourselves and you this prospect will be realized.

The John C. Jewett Mfg. Company, Buffalo, N. Y., send us their 1887 illustrated catalogue of Refrigerators, Water Filters, Water Coolers, Bird Cages, &c. The catalogue contains 200 pages, and the cover is decorated in an artistic manner. In their announcement to the trade they direct attention to the many additions made to their assortment during the last 12 months. They state that with each catalogue issued they have endeavored to add some new goods and improve others, and that their friends will find the present book no exception to previous issues. A comprehensive index in the front of the book classifies the goods, and refers to them by page and by class letter. The catalogue is very fully illustrated throughout, and in addition to the prices brief descriptions or explanations are given where necessary. Besides the goods mentioned above, the catalogue contains among other things Cages of various kinds, Toilet Wares, Cuspadores, Tea Trays, Umbrella Stands, Wine Coolers; Copper, Tin and Nickle-Plated Kettles; Coal Vases, Fire Sets, Ice Cream Freezers, &c.

WHAT THE TRADE SAY.

One result of the discussion which has been carried on in these columns in regard to the payment of bills by the purchaser's checks on his local bank, will be to advise merchants throughout the country of what they evidently have not all been aware, that is, that such checks are not all current in the different markets to which they may be sent. It is quite evident from some letters we have received that merchants have been in the habit of paying their bills with such checks, and have not been aware that the collection of the checks entailed an expense upon the person receiving them for collection through his bank. In cases where such checks are current in the places to which they are sent, there can be no objection to their being used in payment of bills, as we doubt not that "Prosperity," whose letter began this discussion, will readily concede. Where, however, the checks are not current, and involve an expense in their collection, it will be for merchants to decide whether they are willing to use them in the payment of bills, thus putting themselves in the position of permitting the payment they make to net the seller of the goods less than the face of the invoice.

We take pleasure in laying before our readers the following reasonable communication, in which the writer, a Hardware man of Central New York, refers to the practice, and refrains from applying severe terms to those whose practice and views differ from his, in this respect setting an example that we hope will be imitated by any future correspondents who may write to us on this subject. His letter is as follows:

I presume many of your readers like myself have read with interest the letter of "Prosperity" and the reply thereto. In my short business experience I have always used local checks sending them to different parts of our own State and into various Western States. I have never been asked to pay any exchange, and I do not believe, in the large majority of cases, that the parties to whom they were sent paid exchange, for the reason that I have had checks from all over the West and our own State, from New York commission houses, who, by the way, use private checks, and have always deposited them, receiving credit at their full face value. Until I read the letter of "Prosperity" I never had a thought but that the use of private checks was as legitimate as the use of a bank draft. It is a very common thing for agents of wholesale houses to deposit their collections with a customer, receiving therefor his private check, which they forward to the house. I know this from experience. I believe that nine-tenths of the merchants throughout the country, of all grades, are using their own checks in payment of bills, and I also believe that instead of being "sneak-thieves," "swindlers," &c., their record for honesty and square dealing will compare favorably with that of "Prosperity" or any other one of the remaining tenth. The charge of dishonesty falls upon the banks as well as the merchants in question, for they solicit custom and furnish the so called "swindlers" with the blank checks; and, being a party to the swindle, "Prosperity" should have extended his advice to them. I cannot understand why a local check should be uncurrent anywhere. Every business house knows that in depositing checks their own indorsement must be upon every paper offered. That, with their own bank, ought to make the check all right, although the maker may not be known outside of his little village 1000 miles away. But, Mr. Editor, without further defending the practice, I am sure there are thousands of merchants, who, like myself, are innocent of any intentional wrong, and would be as slow to descend to any low meanness or "small rascality" as "Prosperity." I will not call him any names, as I do not think they are as gentlemanly as "local checks," and are uncurrent with me.

FAIR PLAY.

From Dudley Bros. & Lipscomb, Nashville, Tenn., we have the following advices in regard to that market, under date January 22:

Trade continues first-class in all lines of Hardware, and the remarkably mild spring weather we are having has made the Implement business open up earlier than usual. Prices are steady and firm. Burden's Horse Shoes have advanced 25 cents per keg. Bar Iron is firm at 2¼ cents, and Steel Nails at $2.75 rate. D. W. Paschall of the Hardware firm of Paschall & Fall, died of consumption on Tuesday, the 19th inst. He was a genial and high toned gentleman and will be sadly missed. The Hardware store of Brown & Farrell was partially destroyed by fire January 18. They are, however, rapidly getting into shape again to go ahead with their business.

## Metal Market.

**Copper.**—During the week it transpired that the Calumet and Hecla Company, following up the line of policy adopted, sold the manufacturers' pool 10,000,000 lb of Copper at 11¢ to cover their requirements for February and March. There has since been more disposition to enter into the Copper trade at the lowered quotation, and a fair amount of business has been done at 11.40¢ @ 11.20¢ for March and April delivery; at a trifle below that a good quantity could be placed. Meanwhile Chili Bars have ranged as follows: January 20, £39. 7/6; 21st, £39. 2/6; 22d, £39; 24th, £38. 17/6, and yesterday and to day, $38. 15/. Best Selected is steady in London at £43. 10/.

**Tin.**—A large business has been done without any alteration in values. Spot Tin has to some extent sold from 22.65¢ down to 22.60¢, at which latter figure there are still large buyers. February has been done at from 22.70¢ down to 22.62½¢. For March a round lot was taken at 22 65¢, and several hundred tons of London shipment at 22.80¢, less ½ %. Our stock seems to be well under control, and it remains to be seen what the upshot of the large sales alluded to is going to be. The quotations coming this morning from London are Spot Straits £101. 15/, and three months £102. 15/. *Tin Plates.*—The spot demand has continued fair, with a hardening tendency, and the market closes strong at ensuing rates per box: Siemens-Martin Steel, Charcoal finish, $5; do., Coke finish, $4.65; Ternes, $4.20 @ $4 30, and Coke, $4.25 @ $4.35. Liverpool quotes Coke 13/6. The demand for spring futures in the New York market is lively, and for Charcoal Ternes and Coke Tin an advance has to be paid.

**Lead.**—Sales of Common Domestic have been made to the extent of 400 tons all told, the bulk at 4.30¢ and a few small parcels at 4.35¢, but there is such a dull mood that Lead was offered in lines at 4.32½¢ in this city in vain yesterday, and we cannot call the market any better than nominally 4.30¢ at the close to-day Corroding Lead continues limited by makers at the price of 4½¢, and none can be had for less that we know of. The St. Louis Lead quotation is 4.05¢ @ 4.10¢. London cables Soft Spanish unchanged, £12. 17/6, and English Pig £13, a decline of 2/6.

**Spelter and Zinc.**—There has been a moderate amount of activity at $4.55 @ $4.75 for Common Domestic, and $4.90, Silesian, the latter remaining steady in London at £14. 10/. We quote Bertha Refined 8¢. *Sheet Zinc* moves off in a small way at $5.55 @ $5.60, Domestic.

**Antimony.**—A fair, very good jobbing demand is noticeable at 7¾¢ Hallett, and 9¢ Cookson.

### New York Metal Exchange.

The following transactions are reported:

THURSDAY, January 20.

| | |
|---|---|
| 10 tons Tin, February (last half) | 22.70¢ |
| 10 tons Tin, spot | 22.65¢ |
| 20 tons Tin, February | 22.65¢ |
| 100 tons Tin, buyer's option next week | 22.65¢ |

SATURDAY, January 22.

| | |
|---|---|
| 10 tons Tin, February | 22.60¢ |
| 70 tons Tin, January | 22.60¢ |
| 25 tons Tin, 2d half, February | 22.70¢ |
| 25,000 lb Lake Copper, April | 11.40¢ |

MONDAY, January 24.

| | |
|---|---|
| 10 tons Tin, February (last half) | 22.65¢ |
| 25 tons Tin, March | 22.65¢ |

TUESDAY, January 25.

| | |
|---|---|
| 40 tons Tin, February | 22⅝ ¢ |
| 50 tons Tin, February | 22.6 ¢ |
| 25,000 lb Lake Copper, March | 11.30¢ |
| 50,000 lb Lake Copper, April | 11.20¢ |

## Old Metals, Rags, &c.

The purchasing prices offered by dealers are as follows:

| | | | | |
|---|---|---|---|---|
| Heavy Copper | ℔ lb | .... | @ | $0.09 |
| Light Copper | ℔ lb, | .... | @ | .07½ |
| Copper Bottoms | ℔ lb, | .... | @ | .07½ |
| Brass, Heavy | ℔ lb, | .... | @ | .07 |
| Brass, Light | ℔ lb, | .... | @ | .05 |
| Composition | ℔ lb, | .... | @ | .08¼ |
| Lead, Heavy | ℔ lb, | $0.03¾ | @ | .04 |
| Tea Lead | ℔ lb, | .... | @ | .03¼ |
| Zinc | ℔ lb, | .03 | @ | .03¼ |
| Wrought Iron | ℔ ton, | ... | @ | 18.00 |
| Light Iron | ℔ ton, | .... | @ | 9.00 |
| Stove Plate Iron | ℔ ton, | .... | @ | 11.00 |
| Machinery Iron | ℔ ton, | 14 00 | @ | 14.50 |
| Grate Bars | ℔ ton, | .... | @ | 7.00 |
| White No. 1 | ℔ lb, | .03¾ | @ | .04¼ |
| White No. 2 | ℔ lb, | .01¾ | @ | .01¾ |
| Canvas, Linen, No. 1 | ℔ lb, | .04¼ | @ | .04½ |
| Canvas, Cotton, No. 1 | ℔ lb, | .01¾ | @ | .04½ |
| Canvas, No. 2 | ℔ lb, | .02¾ | @ | .02½ |
| Seconds | ℔ lb, | .01 | @ | .01¼ |
| Soft Woolens | ℔ lb, | .05¾ | @ | .06 |
| Mixed Rags | ℔ lb, | .01 | @ | .01¼ |
| Gunny Bagging, No. 1 | ℔ lb, | .01 9-16 | @ | .01 11-16 |
| Jute Butts | ℔ lb, | .01 9-16 | @ | .01⅝ |
| Book Stock | ℔ lb, | .007½ | @ | .01⅜ |
| Newspapers | ℔ lb, | .007½ | @ | .01 |
| Waste Paper | ℔ lb, | .00¼ | @ | .00½ |
| Kentucky Bagging | ℔ lb, | .02¼ | @ | .02½ |
| Kentucky Bale Rope | ℔ lb, | .03½ | @ | .04 |
| Kentucky Bagging | ℔ lb, | .02¼ | @ | .0208 |

### Ericsson's Destroyers for the Government.

In his first annual report Secretary Whitney expressed astonishment that so distinguished an engineer as Capt. John Ericsson, who had been of incalculable service to the country during the civil war, had not been called in to help solve the new problem of naval defense, although millions had been wasted upon costly and useless experiments. The House Naval Committee has since received a proposition from the famous planner of the Monitor directed exclusively to one portion of the problem of harbor defense—that of fighting powerful ironclads with the high explosives. He proposes to sell to the Government his well known vessel, the Destroyer, with her submarine gun, for $112,000, which is less than she cost to construct. His object is to enable the Government to carry on in its own way and under the supervision of its own officers the final tests of the system of submarine artillery on which the Destroyer is based. In addition he offers, if the Government is satisfied with the system, to build 10 more Destroyers of a larger size at a cost of $200,000 each, just as on the successful performance of the Monitor he built for the Government larger vessels of that type.

When it is remembered that Ericsson is now in his 84th year, his proposition to enter into a contract for 10 new vessels indicates excellent spirits and vitality, and, in fact, he seems to be still at the top of his working power. His offer is substantially to give for about the price of one first-class modern cruising battle ship 11 vessels, either one of which could, if the system is what is claimed for it, destroy the most formidable ironclad that should undertake to lay our cities under contribution. The method in which Captain Ericsson has arrived at his conclusion is characteristically thorough. Admitting the need of fixed forts, impregnable to the batteries of ships, and themselves provided with heavy guns, there is always the danger that a portion of a numerous fleet can run by the forts in an unobstructed channel. If the channel is obstructed by booms and by mines, the enemy's torpedo craft may on a dark night cut or blow up the booms or pick up or cut the wires of the mines. If to guard against this result automobile torpedoes are resorted to, these are to some extent still experimental, and are very limited in their range and in their destructive effects. There remains, then, a sphere for a torpedo boat that can be driven for any required number of miles to attack an ironclad, and can then discarge an enormous dynamite projectile at short range against her beneath the thick belt of armor which is placed at the water line.

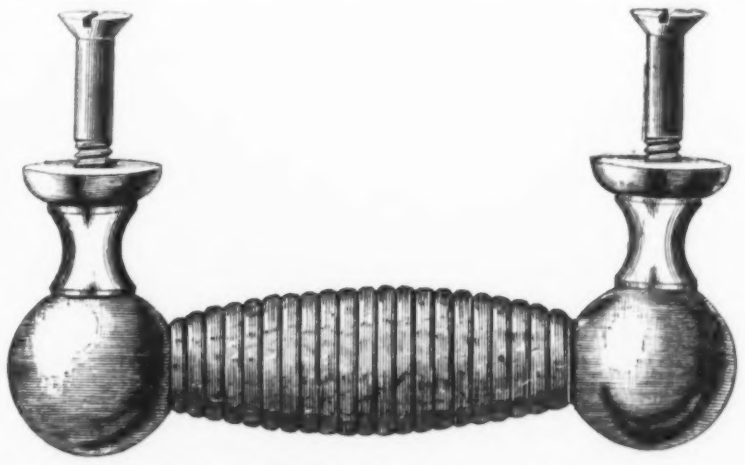
This want is met in Ericsson's system by the submarine gun, which we illustrated and described in detail about a year ago. It is carried in the bow of a massively protected vessel, and by an ingenious apparatus can be discharged under the surface with ease and without the slightest danger of having its action impeded by inrushing water. The bursting charge may be made of several hundred pounds of gun cotton, propelled by ordinary gunpowder, and the effect of this, delivered within a range of a few hundred yards, upon the least protected part of the hull of an ironclad, may be imagined.

Once before the question of purchasing the Destroyer, both for its intrinsic capabilities and for those remaining experiments which it is the Government's province to conduct, has come before Congress. But it was at a time when other forms of naval construction had prior consideration. Now that for the moment these have been authorized, and the question of submarine devices is one of the most pressing in naval construction, the Destroyer may have a better welcome. It is not without interest to note here that one of Captain Ericsson's submarine guns was built by the Delamater Iron Works, of New York, for the English Government and was shipped about December, 1885. What has been done with it it since that time by the English authorities we have been unable to find out.

**Suit to Determine Stockholders' Liability.**—On the 19th inst., at Cleveland, Ohio, the trial of a suit was begun which is of much interest to stockholders of iron manufacturing companies. The Kansas Rolling Mill Company was incorporated in 1875, in Wyandotte County, Kan., with a capital of $300,000. Of the shares 2865 were issued and became the property of D. P. Ellis, Henry Chisholm, T. P. Handy, Augustus Handy, Amasa Stone, W. H. Harris and William Harris, nearly all of whom are wealthy citizens of Cleveland. Transfers were afterward made, and the stockholders who now figure as defendants are T. P. Handy, Ira Harris, W. H. Harris, Daniel P. Ellis, Augustus Handy, A. B. Stone, John Hay and Samuel Mather, executors of Amasa Stone. The suit was brought against these gentlemen by the Chicago, Burlington and Quincy Railroad Company, which asserts that it was given a judgment against the mill company in 1883 of $58,000 by the Circuit Court of Kansas, no part of which has been paid. Prior to this, in 1882, the mill stock was doubled, and a corresponding increase of stock made to the gentlemen interested. The petitioners aver that the property was mortgaged in 1879 to trustees to secure the issue of $100,000 of bonds, and that the company assigned in January, 1883, the trustees taking possession. Since then, it is alleged, the property has been sold to pay off the mortgage debt, and the Ohio men are said to be the only solvent stockholders. Suit is commenced, therefore, to render them individually liable for the indebtedness. In addition to the Chicago, Burlington and Quincy judgments there are claims presented by the Hannibal and St. Joseph road for $27,000, the Kansas City, Fort Scott and Gulf road for $38,000, Keith & Perry $14,000, and numerous others for smaller amounts. The suit involves about $175,000 in the aggregate.

### A New Drawer Pull.

The Yale & Towne Mfg. Co., Stamford, Conn., and Reade street, New York, are putting on the market the Bardsley drawer pull, which is represented in the accompanying illustration, which requires but little explanation in order to enable our readers to understand its special features. The manner in which it is applied to the drawer is clearly indicated. The knobs and shank are made of bronze and the handle of polished wood, the pulls being made regularly in the same woods as are specified for door knobs. The size of the pull is 4 inches.



*Yale & Towne Mfg. Co.'s New Drawer Pull.*

### Exports to Foreign Ports.

The value of the exports of produce and merchandise from New York, and how distributed among the different countries with which we have direct communication, appears from the following statement for the year 1886:

| | |
|---|---|
| Russia | $127,571 |
| Norway | 1,261,705 |
| Sweden | 1,269,782 |
| Denmark | 3,126,289 |
| Danish West Indies | 462,753 |
| Belgium | 17,350,644 |
| Netherlands | 11,641,928 |
| Dutch East Indies | 2,025,522 |
| Dutch West Indies | 527,740 |
| Dutch Guinea | 11,781 |
| Germany | 31,794,249 |
| England and Wales | 132,473,621 |
| Scotland | 20,154,594 |
| Ireland | 2,229,970 |
| Gibraltar | 568,246 |
| Malta | 28,847 |
| Canada | 1,432,159 |
| Quebec | 3,882 |
| Nova Scotia | 382,433 |
| Newfoundland | 1,032,942 |
| New Brunswick | 289,635 |
| British West Indies | 6,059,023 |
| British East Indies | 3,949,160 |
| Hong Kong | 559,835 |
| British Guinea | 998,577 |
| British Honduras | 211,641 |
| British Possessions in Africa | 609,532 |
| British Australasia | 4,877,763 |
| New Zealand | 971,757 |
| Tasmania | 12,587 |
| France | 19,395,039 |
| French West Indies | 1,087,415 |
| French Possessions in Africa | 151,911 |
| French Guinea | 99,575 |
| St. Pierre (Miquelon) | 42,904 |
| Spain | 4,827,591 |
| Spanish Possessions in Africa | 214,639 |
| Cuba | 8,425,091 |
| Porto Rico | 1,508,221 |
| Portugal | 3,497,903 |
| Portuguese Possessions in Africa | 3,177 |
| Italy | 6,606,482 |
| Austria | 145,596 |
| Greece | 2,690 |
| Turkey in Europe | 396,111 |
| Turkey in Asia | 2,217 |
| Egypt | 215,764 |
| Arabia | 611,359 |
| Africa | 237,520 |
| Liberia | 85,323 |
| Hayti | 2,395,083 |
| Santo Domingo | 1,025,945 |
| Mexico | 2,754,673 |
| Central America | 998,104 |
| United States of Colombia | 6,821,769 |
| Venezuela | 2,774,891 |
| Brazil | 4,610,610 |
| Argentine Republic | 3,764,199 |
| Uruguay | 978,514 |
| Chili | 1,098,848 |
| Peru | 347,939 |
| China | 4,063,605 |
| Japan | 1,117,519 |
| Azores Islands | 39,124 |
| Madeira Islands | 31,916 |
| Philippine Islands | 66,558 |
| Madagascar | 84,417 |
| Ecuador | 115,149 |
| Siam | 61,504 |
| Anam | 210,042 |
| Sandwich Islands | 92,983 |
| Total for exact year 1886 | $318,171,611 |
| Total for exact year 1885 | 330,818,668 |
| Total for exact year 1884 | 330,861,376 |
| Total for exact year 1883 | 349,442,436 |
| Total for exact year 1882 | 346,498,583 |
| Total for exact year 1881 | 373,186,370 |
| Total for exact year 1880 | 415,822,837 |
| Total for exact year 1879 | 375,208,565 |
| Total for exact year 1878 | 349,414,366 |
| Total for exact year 1877 | 296,933,971 |

# Current Hardware Prices, January 26, 1887.

## HARDWARE.

**Ammunition.**
*Caps, Percussion, ₩ 1000—*
Hicks & Goldmark's
F. L. Waterproof, 1-10's.....50¢ } dis 25 %
E. B. Trimmed Edge, 1-10's.....65¢
E. B. Ground Edge, Central Fire, 1-10's.70¢
Double Waterproof, 1-10's.....$1.40
Musket Waterproof, 1-10's.....54¢
G. D.....28¢
S. B.....30¢
Union Metallic Cartridge Co.
F. C. Trimmed.....50¢ } dis 25 %
F. L. Ground.....65¢
Cen. Fire Ground.....70¢
Double Waterproof.....$1.40
Double Waterproof, in 1-10's.....$1.40
S. B. Genuine Imported.....45¢
Eley's E. B.....56¢
Eley's D Waterproof, Central Fire.....$1.60
*Cartridges—*
Rim Fire Cartridges.....dis 60&2 %
Rim Fire Military Cartridges.....dis 15&2 %
Cen. Fire Cartridges, Pistol and Rifle.....dis 40&2 %
Cen. Fire Cartridges, Military & Sporting..dis 30&2 %
Blank Cartridges, except 22 and 32 cal., an additional 10 % over above discounts.
Blank Cartridges, 22 cal.....$1.50, dis 2 %
Blank Cartridges, 32 cal.....$3, dis 2 %
Primed Shells and Bullets.....dis 25&2 %
B. B. Caps, Round Ball.....$1.60, dis 2 %
B. B. Caps, Conical Ball, Swaged.....$1.75, dis 2 %
*Primers—*
Berdan Primers, all sizes, and B. L. Caps (for Sturtevant Shells).....90¢, dis 2 %
All other Primers, all sizes.....$1.10, dis 2 %
*Shells—*
Paper Shot Shells, 1st & 2d or S. G. qual. dis 25&5&2 %
Seibold's Combination Shot Shells.....dis 25&10&2 %
Paper Shot Shells, Club, Rival, Climax. dis 40&5&2 %
Paper Shot Shells, Star Brand.....dis 50&5&2 %
Brass Shot Shells, 1st quality.....dis 60&2 %
Brass Shot Shells, Club, Rival & Climax...dis 65&2 %
*Wads—*
U. M. C. & W. R. A.—B. E., 11 up.....$2.00 } dis 20&2 %
U. M. C. & W. R. A.—B. E., 9&10.....2.30
U. M. C. & W. R. A.—B. E., 7&8.....2.60
U. M. C. & W. R. A.—P. E., 11 up.....3.10
U. M. C. & W. R. A—P. E., 9&10.....4.00
U. M. C. & W. R. A.—P. E., 7&8.....490
Eley's B. E., 11 up.....$1.75
Eley's P. E., 11 @ 20.....$2.80
**Anvils.**—Eagle Anvils.....₩ lb 10¢, dis 20 @ 20&5 %
Wright's.....9½¢
Armitage's Mouse Hole.....9¢
Armitage Mouse Hole, Extra.....11½¢
Trenton.....9¼¢@9½¢
Wilkinson's.....9½¢@10¢
J. & Riley Carr, Patent Solid.....11@11½¢
*Anvil Vise and Drill—*
Millers Falls Co.....$18.00, dis 20 %
Cheney Anvil and Vise.....dis 25 %
Allen Combined Anvil and Vise.....$3, dis 40&10 %
Hayden & Barnes.....No. 2, per gross, $30; No. 3, $90

**Augers and Bits.**
Douglass Mfg. Co. } ...dis 60&10 %
New Haven Copper Co.
Wm. A. Ives & Co.
Humphreysville Mfg. Co.
French, Swift & Co. (F. H. Beecher)
Connecticut Valley Mfg. Co
Snell's.....dis 60@60&5 %
Cook's, Douglass Mfg. Co.....dis 55 %
Cook's, New Haven Copper Co...dis 50&10@50&10&5 %
Ives' Circular Lip.....dis 60 %
Patent Solid Head.....dis 30 %
C. E. Jennings & Co., No. 10, extension lip.....dis 40 %
C. E. Jennings & Co., No. 30.....dis 60 %
C. E. Jennings & Co., Auger Bits, in fancy boxes, ₩ set, 32¼ quarters, No 5, $5; No. 30, $3.....dis 20 %
Lewis' Patent Single Twist.....dis 45 %
Russell Jennings' Augers and Bits.....dis 25 %
Imitation Jennings' Bits (new list).....dis 50&10&5@60 %
Car Bits, Snell Mfg. Co.....dis 40&10&10 %
Car Bits, New Haven Copper Co.....dis 50&10 %
L'Hommedieu Car Bits.....dis 15 @ 20 %
Snell Mfg. Co.'s Jennings' Bits (new list).....dis 50&5 %
Forstner Pat. Auger Bits.....dis 10 %
*Hollow Augers—*
Ives' } dis 25&10 @ 25&10&5 %
French, Swift & Co.
Douglass'
*Expansive Bits—*
Clark's small, $18; large, $26.....dis 35 @ 35&5 %
Ives' No. 4, per doz., $60.....dis 35 @ 40 %
Swan's.....dis 40 %
Steer's, No. 1, $26; No. 2, $22.....dis 35 %
Bonney's Adjustable ₩ doz. $48.....dis 40&10 %
Stearns' Adjustable ₩ doz. $48.....dis 20&10 %
Ives' Expansive, each $4.50.....dis 45 @ 50 %
Universal Expansive, each $4.50.....dis 20 %
Wood's.....dis 25 @ 25&10 %
*Gimlet Bits—*
Common.....₩ gross $3.00 @ $3.25
Diamond.....₩ doz. $1.10, dis 25&10 %
"Bee".....dis 25 %
Double Cut, Shepardson's.....dis 45 %
Double Cut, Ct. Valley Mfg. Co.....dis 30&10 %
Double Cut, Hartwell's, ₩ gro, $6.50.....dis 10 %
Double Cut, Douglass'.....dis 40 %
Double Cut, Ives'.....dis 50&10 @ 60 %
*Bit Stock Drills—*
Morse Twist Drills.....dis 50&10 %
Standard.....dis 50&10 %
Cleveland.....dis 50&10 %
Syracuse, for metal.....dis 50&10 %
Syracuse, for wood (wood list).....dis 30 @ 30&5 %
Williams' or Holt's, for metal.....dis 50&10&10 %
Williams' or Holt's, for wood.....dis 40&10 %
*Ship Augers and Bits—*
L'Hommedieu's.....dis 15 @ 20 %
Watrous's.....dis 15 @ 20 %
Snell's.....dis 15 @ 20 %
Snell's Ship Auger Pattern Car Bits.....dis 15 @ 20 %
**Awl Hafts.**
Sewing, Brass Ferrule.....$3.50 ₩ gross—dis 45&10 %
Patent Sewing, Short.....$1.00 ₩ doz—dis 40&10 %
Patent Sewing, Long.....$1.20 ₩ doz.—net
Patent Peg, Plain Top.....$10.00 ₩ gross—dis 45&10 %
Patent Peg, Leather Top.....$12.00 ₩ gross—dis 45&10 %
**Awls, Brad Sets, &c.**
Awls, Sewing, Common.....₩ gross $1.70—dis 35 %
Awls, Shouldered Peg.....₩ gross $2.45—dis 40@40&10 %
Awls, Patent Peg.....₩ gross 63¢—dis 40@40&10 %
Awls, Shouldered Brad.....$2.70 ₩ gross—dis 35 %
Awls, Handled Brad.....$7.50 ₩ gross—dis 45 %
Awls, Handled Scratch.....$7.50 ₩ gross—dis 35&10 %
Awls, Socket Scratch.....$1.50 ₩ doz—dis 25 @ 30 %
**Awl and Tool Sets.**
Aiken's Sets, Awls & Tools, No. 20, ₩ doz. $10—dis 50&10 %
Fray's Adj. Tool Hdls., Nos. 1, $12; 2, $18.; 3, $12; 4, $9, dis 25@25&10 %
Miller's Falls Adj. Tool Hdls., Nos. 1, $12; 2, $18. dis 25 %
Henry's Combination Haft.....₩ doz, $6
Brad Sets, No. 42, $10.50, No. 43, $12.50...dis 70&10&5 %
Brad Sets, Stanley's Excelsior, No. 1, $7.50, } dis 30&10 %
Brad Sets, Stanley's Excelsior, No. 2, $4.00,
Brad Sets, Stanley's Excelsior, No. 3, $5.50.
**Axes.**
*Makers' and Special Brands—*
First quality.....₩ doz $7.00 @ $7.25
Others.....₩ doz $6.50 @ $6.75
**Axle Grease.**
Frazer's, in bulk.....Keg ₩ lb, 4¢; Pail, ₩ lb, 5¢ net
Frazers, in boxes.....₩ gross $9.50
Dixon's Everlasting, in bxs., ₩ doz., 1 lb; $1.20; 2 lb, $2
Dixon's Everlasting.....10-lb pails, each, 85¢
Lower grades, special brands.....₩ gro $5.50 @ $7
**Axles.**—Nos. 1 to 6.....3¾¢; Short bed, 4½¢
Nos. 7 to 18.....dis 60&10@60&10&5 %
Nos. 19 to 22.....dis 60&10&5@60&10&10 %
Nos. 23 to 26.....dis 50&10&5 %
National Wrought Steel Tubular Self-Oiling:
Standard Farm (1 to 5) and Special Farm (A1 to A5)
Less than 10 sets.....dis 33⅓ %
Over 10 sets.....dis 33⅓&5 %
X Strong Exp. (6 to 9), & XX Strong Truck (10 to 16):
Less than 10 sets.....dis 10 %
Over 10 sets.....dis 10&5 %

**Bag Holders.**
Sprengle's Pat., ₩ doz $18.....dis 60 %
**Balances.**—Spring Balances.....dis 50 %
Common 24 lb.....₩ doz., $1.50—dis 50 %
Chatillon's Spring Balances.....dis 50 %
Chatillon's Circular Spring Balances.....dis 60 %
**Bells.**
*Hand—*
Light Brass.....dis 75&10 @ 75&10&5 %
Extra Heavy.....dis 65&10 @ 70 %
White Metal.....dis 70 @ 70&10 %
Silver Chime.....dis 25&10&5 %
Globe (Cone's Patent).....dis 25&10 @ 35 %
*Door—*
Gong, Abbe's.....dis 25&10 @ 35 %
Gong, Yankee.....dis 40&10 %
Gong, Barton's.....dis 40&10 @ 50 %
Crank, Taylor's.....dis 25&10 %
Crank, Brooks'.....dis 50&10&2 %
Crank, Cone's.....dis 10 %
Crank Connel's.....dis 20&10 %
Lever, Sargent's.....dis 60&10 %
Lever, Taylor's Bronzed or Plated.....net
Lever, Taylor's Japanned.....dis 25&10 %
Lever, R. E. ₩ Co.'s.....dis 50&10&2 %
Pull, Brook's.....dis 50&10&2 %
Pull Western's.....dis 25&10 %
*Cow—*
Common Wrought.....dis 60&10 %
Western.....dis 20&10 %
Western, Sargent's list.....dis 70&10 %
Kentucky "Star".....dis 20&10 %
Kentucky, Sargent's list.....dis 70&10 %
Dodge, Genuine Kentucky, new list. dis 70@70&10 %
Texas Star.....dis 50&10 @ 50&10&5 %
Call.....dis 40@40&5 %
Farm Bells.....₩ lb, 2½ @ 2¾¢
Steel Alloy Church and School Bells.....dis 40 %
**Bellows.**—Blacksmiths'.....dis 50&10 @ 60 %
Molders'.....dis 50@50&5 %
Hand Bellows.....dis 50@50&5 %
**Belting, Rubber.**
Standard.....dis 70&10 @ 70&10&5 %
Extra.....dis 60&10 @ 60&10&10 %
N. Y. B. & P. Co., Standard.....dis 70&5 %
N. Y. B. & P. Co., Extra Standard.....dis 60&5 %
**Bench Stops.**
Hotchkiss's.....₩ doz $5.00—dis 10 @ 10&10 %
Weston's, per doz No. 1, $10; No. 2, $9...dis 25&10&5 %
McGill's.....₩ doz $3—dis 10 %
Morrill's.....₩ doz $9—dis 50 %
**Bits.**—Auger, Gimlet Bit Stock, Drills, &c. See Augers and Bits.
**Bit Holders.**
Extension, Barber's.....₩ doz $15.00—dis 40&5 %
Extension, Ives'..₩ doz $20.00—dis 40&10 @ 40&10&5 %
Diagonal.....₩ doz $24.00—dis 40 %
Angular.....₩ doz $24.00—dis 40&5 %
**Blind Adjusters.**
Domestic.....₩ per doz $3.00—dis 33⅓ %
Excelsior.....₩ doz $10.00—dis 50&10&2 %
Washburn's Self-Locking.....dis 20 @ 20&10 %
**Blind Fasteners.**
Mackrell's.....₩ doz pairs, $1.00—dis 20@20&10 %
Van Sand's Screw Pattern.....$15 ₩ gro.—dis 60&10 %
Van Sand's Old Pattern.....$15 ₩ gro.—dis 55&10 %
Washburn's Old Pattern.....$9 ₩ gro. net
Merriman's.....new list, net
Salisbury & Austin No. 2008.....$9 ₩ gro. net
Security Gravity.....$9 ₩ gro. net
**Blind Staples.**
Barbed, ½ in. and larger.....₩ lb 8 @ 8½¢ net
Barbed, ⅜ in.....₩ lb 9 @ 9½¢ net
**Blocks.**
Ordinary Tackle Blocks, &c, list Ap. 17, '85..dis 50 @ —
**Bolts.**
*Door and Shutter—*
Cast Iron Barrel, Square, &c.....dis 70 @ 70&10 %
Cast Iron Shutter Bolts.....dis 70 @ 70&10 %
Cast Iron Chain (Sargent's list).....dis 65&10 %
Ives' Patent Door Bolts.....dis 55 %
Wrought Barrel.....dis 70 @ 70&10 %
Wrought Square.....dis 70 @ 70&10 %
Wr't Shutter, all Iron, Stanley's list.....dis 60&10 %
Wr't Shutter, Brass Knob, Stanley's.....dis 40&10 %
Wrought Shutter, Sargent's list.....dis 60&10 %
Wrought Sunk Flush, Sargent's list.....dis 55&10 %
Wrought Sunk Flush, Stanley's list.....dis 40&10&5 %
Wrought B.K. Flush, Com'n Stanley's list. dis 55&10 %
*Carriage—*
Com. list June 10, '84.....dis 70&15 %
Genuine Eagle, list Oct., '84.....dis 75 @ 75&5 %
Phila. pattern, list Oct. 7, '84...dis 75&10@75&10&5 %
R. B. & W., old list.....dis 70&5 %
*Tire—*
Common, list Feb. 28, 1883.....dis 70 %
P. C. B. & N. Co., Empire, list Feb. 28, 1883.....dis 70 %
P.C.B.&N.Co., Keystone, Phil. list, Oct.'84...dis 82½ %
P.C.B.&N.Co., Norway, Phil. list, Oct.'84. dis 75&10 %
Am. S. Co., Norway, Ph'l., list Oct.16, '84..dis 75&10 %
Am. S. Co., Eagle, Phil., list Oct.16, '84.....dis 80 %
Am. S. Co., Philadel. list, Oct. 16, '84.....dis 85 %
Am. S. Co., Bay State, list Feb. 28, '83.....dis 70 %
R. B. & W., Philadel. list Oct. 16, 1884.....dis 80&5 %
R. & E. Mfg. Co.....dis 65&10 %
*Stove and Plow—*
Stove.....dis 67½ %
Plow.....dis 60&5 %
Am. S. Co. Stove, Annealed.....dis 67½ %
R. B. & W., Plow.....dis 50&5 %
R. B. & W., Stove.....dis 70&5 %
R. & E. Mfg. Co., Stove.....dis 65&10 %
Machine.....dis 70@70&5 %
Bolt Ends.....dis 70@70&5 %
**Borax.**.....₩ lb 8½¢ @ 8¾¢
**Boring Machines.**

| Without Augers. | Upright. | Angular. | |
|---|---|---|---|
| Douglas | $5.50 | $6.75 | dis 50 % |
| Snell's, Rice's Patent | 5.50 | 6.75 | dis 40&10&10 % |
| Jennings | 5.50 | 6.75 | dis 45@45&10 % |
| Other Machines | 2.35 | 2.75 | net |
| Phillips' Pat., with Augers | 7.00 | 7.50 | net |

**Bow Pins.**
Humason, Beckley & Co.'s, Nos 1 and 2—dis 60&10 @ 60&10&5 %
Humason, Beckley & Co.'s other Nos..dis 70 @ 70&10 %
Sargent & Co.'s.....$17 and $18, dis 60&10 %
Peck, Stow & W. Co.....dis 50&10 @ 50&10&5 %
**Braces.**
Backus, Nos. 110 to 114 and 31 to 33..dis 60&5@60&10 %
Backus, Nos. 6, 8, 12, 14.....dis 60&10&5 %
Backus, Nos. 16, 18, 20, 29, 7, 9, 11.....dis 70&10&5 %
Barber's, Nos. 10 to 16.....dis 50 %
Barber's, Nos. 30 to 33.....dis 50 %
Barber's, Nos. 40 to 63.....dis 50&10 %
Barker's, Nos. 8, 10 and 12.....dis 75&10@80 %
Barker's, Plated, Nos. 8, 10 and 12.....dis 65&10@70 %
Osgood's Ratchet.....dis 40&10@50 %
Spofford's.....dis 50&10 %
Ives' New Haven.....dis 70 @ 70&5 %
Ives' Novelty.....dis 60&5 @ 60&10 %
Ives' Novelty, Improved.....dis 60&5 @ 60&10 %
Ives' Spofford.....dis 60 @ 60&5 %
Common Ball, American.....$1.10 @ $1.15
Bartholomew's, Nos. 25, 27, 30.....dis 50&10@60&5 %
Bartholomew's, Nos. 117 118, 119.....dis 70 @ 70&5 %
Amidon's Barker's Imp'd.....dis 60&10&5 %
Amidon's Ratchet.....dis 70 @ 70&5 %
Amidon's Corner Brace.....dis 40 @ 40&10 %
Amidon's Universal.....8 in., $1.90; 10 in., $2.10
Amidon's Buffalo Ball.....$1.10 @ $1.15
P. S. & W.....dis 50&10 %
**Brackets.**
Shelf, plain, Sargent's list...dis 55&10 @ 55&10&10 %
Shelf, fancy, Sargent's list.....dis 60&10 @ 60&10&10 %
Reading, plain.....dis 60&10 @ 60&10&10 %
Reading, Rosette.....dis 65&10 @ 65&10&10 %
**Bright Wire Goods.**—...dis 75&10 @ 75&10&5 %
**Broilers.**
Henis' Self-Basting.. { Inch..... 9 10 9 x 11 / Per doz..... $4.50 5.50 6.50
**Buckets.**—See Well Buckets and Pails.
**Bull Rings.**—Union Co. Nut.....dis 55 %
Sargent's.....dis 66⅔&10 %
Hotchkiss' low list.....dis 30 %
Humason, Beckley & Co.'s.....dis 70&10 @ 70&10&5 %
Peck, Stow & W. Co.'s.....dis 50&10 @ 50&10&5 %
Elrich Hdw. Co., White Metal, low list.....dis 50 %
**Butts.**
*Brass—*
Wrought Brass.....dis 80 %
Cast Brass, Tiebout's.....dis 40 %
Cast Brass, Corbin's Fast..dis 33⅓&10@33⅓&10&10 %
Cast Brass, Loose Joint....dis 33⅓&10@33⅓&10&10 %
*Cast Iron—*
Fast Joint, Narrow.....dis 60&5 @ 60&10&5 %
Fast Joint, Broad.....dis 60&5 @ 60&10&5 %
Loose Joint } dis 70@ 70&10 %
Loose Joint, Japanned
Loose Joint, Jap. with Acorns
Parliament Butts
Mayer's Hinges
Loose Pin, Acorns
Loose Pin, Acorns, Japanned
Loose Pin, Acorns, Jap, Pltd. Tips
*Wrought Iron—*
Fast Joint Narrow.....dis 65&2 @ 65&10&2 %
Fast Joint, Lt. Narrow.....dis 65&2 @ 65&10&2 %
Fast Joint, Broad.....dis 65&2 @ 65&10&2 %
Loose Joint, Broad.....dis 65&5&2 @ 65&10&2 %
Table Butts, Back Flaps, &c.....dis 65&2 @ 65&10&2 %
Inside Blind, Regular.....dis 65&2 @ 65&10&2 %
Inside Blind, Light.....dis 65&2 @ 65&10&2 %
Loose Pin, Wrt.....dis 65&5&2 @ 65&10&2 %
Loose Pin, Light.....dis 65&2 @ 65&10&2 %
Bronzed Wrought Butts.....dis 40&2 %
*Blind Butts—*
Parker.....dis 75&2 %
Palmer.....dis 50&5&10 %
Seymour.....dis 70&2 %
Lull & Porter.....dis 80 %
Nicholson.....dis 45&10 %
Huffer.....dis 50 %
Clark's, Nos. 1, 3, 5.....dis 80&5 @ 80&10 %
Sargent's, Nos. 1, 3, 5, 11, 13.....dis 75&10 %
Sargent's, No. 12.....dis 75&10&10 %
Reading's Gravity.....dis 75&10 %
Shepard's "Noiseless," Nos. 50, 60, 65 & 55..dis 75&5 %
Shepard's Niagara Gravity, Nos. 1, 3 and 5.....dis 75&10&5 %
Shepard's Buffalo Gravity, Nos. 1, 3 and 5.....dis 75&10&5 %
Shepard's Champion Gravity, No. 75.....dis
Shepard's Steamboat Gravity No. 10.....dis
Shepard's Acme Lull & Porter.....dis 75&10 %
Shepard's O. S. Lull & Porter.....dis 75&10&2½ %
Shepard's "Queen City" Reversible.....dis 75 %
Clark's Improved Shutter Hinge, Nos. 0, 1, 1½, 2, 2½, 3.....dis 70 @ 70&5 %
North's Automatic Blind Fixtures, No. 2, for Wood, $10.50; No 3, for Brick, $13.50... dis 25&2 %
**Butcher's Cleavers.**
Humason & Beckley Mfg. Co.....dis 30&5 @ 40 %
Bradley's.....dis 25 @ 30 %
L. & I. J. White.....dis 20&5 %
Beatty's.....dis 40 @ 40&5 %

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| $16.50 | 19.00 | 21.50 | 24.00 | 27.00 | 30.00 | 33.50 | 36.50 |

New Haven Edge Tool Co.'s.....dis 40 %
Albertson Mfg. Co.....".....dis 33⅓ @ 40 %

**Calipers.**—See Compasses.
**Can Openers.**
Messenger's Comet.....₩ doz $3.00, dis 25 %
American.....₩ gross $3.00
Duplex.....₩ doz 25¢, dis 15 @ 20 %
Lyman's.....₩ doz $3.75, dis 20 %
No. 4, French.....₩ doz $2.25, dis 55 @ 60 %
No. 5, Iron handle.....₩ gross $6.00, dis 45 @ 50 %
Eureka.....₩ doz $2.50, dis 10 %
Sardine Scissors.....₩ doz $7.00, dis 55 %
Star.....₩ doz $5.00, dis 25&5 %
Sprague, No. 1, $2; 2, $2.25; 3, $2.50.....dis 50&10&10 %
World's Best, ₩ gross, No. 1, $12.00; No. 2, $24.00; No. 3, $36.00.....dis 50&10 %
Universal.....₩ doz $3.00, dis 35&5 %
Domestic.....₩ doz $2.50, dis 45 %
Champion.....₩ doz $2.00, dis 50 %
**Cards.**
Horse and Curry.....dis 10 @ 10&10 %
Cotton.....New list, Aug., 1883, dis 10 %
Wool..... " " " dis 10 %
**Carpet Stretchers.**
Cast Steel, Polished.....₩ doz $3.25
Cast Iron, Steel Points.....₩ doz 80¢
Socket.....₩ doz $1.75
Bullard's.....dis 25 @ 25&10 %
**Carpet Sweepers.**
Bissell No. 5.....₩ doz $17.00
Bissell No. 7 New Drop Pan.....₩ doz $19.00
Bissell No. 12 Hall Sweeper.....₩ doz $36 00
Grand Rapids.....₩ doz $27.00
Crown Jewel.....No. 1, $18; No. 2, $19; No. 3, $20
Magic.....₩ doz $15.00
Jewel.....₩ doz $17.00
Mystic.....₩ doz $16.00
Cottage.....₩ doz $15.00
Garland.....₩ doz $18.00
Parlor Queen.....₩ doz $24.00
Housewife's Delight.....₩ doz $15.00
Queen.....₩ doz $16.00
Queen, with band.....₩ doz $18.00
King.....₩ doz $30.00
Weed Improved.....₩ doz $18.00
Hub.....₩ doz $16.00
Cog Wheel.....₩ doz $16.00
Church.....each $3.00
**Cartridges.**—See Ammunition.
**Casters.**
Bed } New list July 8, 1886, dis 50&10 @ 60&5 %
Plate
Shallow Socket
Deep Socket.....40&10 %
Yale Casters, list May, 1884.....dis 25&10@25&10&5 %
Yale, Gem.....dis 60@60&5 %
Martin's Patent (Phoenix).....dis 45&10 @ 50 %
Payson's Anti friction.....dis 60 %
"Giant" Truck Casters.....dis 10 @ 10&5 %
Stationary Truck Casters.....dis 45&10
**Cattle Leaders.**
Humason, Beckley & Co.'s.....dis 75 %
Sargent's.....dis 66⅔&10 %
Hotchkiss.....dis 30 %
Peck, Stow & W. Co.....dis 50&10 %
**Chain.**
Trace, 6½-10-2, Eng. sizes....₩ pair 79¢ } dis 50&10 @ 60 %
Trace, 6½-10-3, Eng. sizes....₩ pair 70¢
Trace, 7-10-2, Eng. sizes....₩ pair 86¢
Log, Fifth, Stretcher, and other fancy Chains, list Nov. 1, 1884.....dis 50&10 @ 60 %

| American Coil | 3-16 | ¼ | 5-16 | ⅜ | 7-16 | ½ | ⅝ | ¾ |
|---|---|---|---|---|---|---|---|---|
| In cask lots. | 8½¢ | 6¢ | 4.9¢ | 4.4¢ | 4.2¢ | 4¢ | 3.8¢ | 3.7¢ |

Less than cask lots, add ½¢ ₩ lb.
German Coil, list of June, 1881.....dis 55&5@60 %
German Halter Chain, list of June, 1884. dis 55&5@60 %
Covert Halter, Hitching and Breast.....dis 50&2 %
Covert Traces.....dis 40&2 %
Oneida Halter Chain (old list).....dis 45 %
Galvanized Pump Chain.....₩ lb 5¼¢ @ 5¾¢
Jack Chain, Iron.....dis 75&10 @ 75&10&5 %
Jack Chain, Brass.....dis 75 @ 75&10 %
**Chalk.**
White.....₩ gro 55¢
Red.....₩ gro 75¢
Blue.....₩ gro 90¢
White Crayons.....₩ gro 12¢ @ 12½¢
**Chalk Lines.**—See Lines.
**Chisels.**
*Socket Framing and Firmer—*
Witherby and Douglas } dis 75 @ 75&5 %
P., S. & W.
New Haven and Middlesex
Buck Bros.....dis 30 %
Merrill.....dis 60&10&10 %
L. & I. J. White.....dis 30 @ 30&5 %
Tanged Firmers.....dis 50 @ 50&5 %
Tanged Firmers, Butcher's.....$4.75 @ $5.00
Tanged Firmers, Spear & Jackson's.....$5.00 to £
Tanged Firmers, Buck Bros.....dis 30 %
Cold Chisels, ₩ lb.....16¢ @ 19¢
**Chucks.**
Beach Patent.....each, $8.00, dis 20 %
Morse's Adjustable.....each, $7.00, dis 20 @ 20&5 %
Danbury.....each, $6.00, dis 30 @ 30&5 %
Syracuse, Balz Pat.....dis 25 %
**Clamps.**
Providence Tool Co.'s Wrought Iron.....dis 25 %
Adjustable, Gray's.....dis 20 %
Adjustable, Lambert's.....dis 20 %
Adjustable, Snow's.....dis 40&5 %
Adjustable, Hammer's.....dis 15 %
Adjustable, Stearns'.....dis 20&10 %
Cabinet, Sargent's.....dis 66⅔ %
Carriage Makers', Sargent's.....dis 66⅔&10 %
Eberhard Mfg. Co.....dis 40&5 @ 40&10 %
Warner's.....dis 40&10 %
Saw Clamps.....See Vises
**Clips.**
Norway, Axle, ¼ & 5-16.....dis 55&5&5
Second grade Norway Axle, ¼ & 5-16.....dis 65&5
Superior Axle Clips.....dis 70&5
Norway Spring Bar Clips, 5-16.....dis 60&5&5
Wrought-Iron Felloe Clips.....₩ lb 5½¢
Steel Felloe Clips.....₩ lb 5¢
**Cockeyes.**.....dis 50 %
**Cocks, Brass.**
Hardware list.....dis 55&2 %
**Coffee Mills.**
Board and Box.....dis 40&10&2 %
Selsor's Patent.....$9.50, $10.50, dis 25 %
American, Enterprise Mfg. Co.....dis 20&10@30 %
The "Swift," Lane Bros.....dis 20&10 %
Webb's Patent.....dis 45 %
**Compasses, Dividers, &c.**
Compasses, Calipers, Dividers.....dis 70@70&10 %
Bemis & Call Co.'s Dividers.....dis 60&5 %
Bemis & Call Co.'s Compasses & Calipers....dis 50&5 %
Bemis & Call Co.'s Wing & Inside or Outside. dis 50&5 %
Bemis & Call Co.'s Double.....dis 60 %
Bemis & Call Co.'s (Call's Patent Inside).....dis 30 %
Excelsior.....dis 50 %
Cook's Extension.....dis 20 @ 20&5 %
J. Stevens & Co.'s Calipers and Dividers....dis 25&10 %
**Coopers' Tools.**
Bradley's.....dis 20 %
Barton's.....dis 20@20&5 %
L. & I. J. White.....dis 20&5 %
Albertson Mfg. Co.....dis 25 %
Beatty's.....dis 40 @ 40&5 %
Sandusky Tool Co.....dis 30 @ 30&5 %
**Corkscrews.**
Humason & Beckley Mfg. Co.....dis 40 @ 40&10 %
Clough's Patent.....dis 33⅓ @ 33⅓&5 %
Howe Bros. & Hulbert.....dis 35 %
**Corn Knives and Cutters.**
Bradley's.....dis 10 %
Wadsworth's.....dis 25 %
**Cradles.**—Grain.....dis 40&10@50 %
**Crow Bars.**
Cast Steel.....₩ lb 4¢
Iron, Steel Points.....₩ lb 3½¢
**Curry Combs.**
Fitch's.....dis 50&10 @ 50&10&10 %
Rubber.....₩ doz $10.00, dis 25 @ 30 %
Perfect.....dis 50 %
**Curtain Pins.**
Silvered Glass.....net
White Enamel.....net
**Cutlery.**
Beaver Falls and Booth's.....dis 33⅓ %
Wostenholme.....$7.75 to £

**Dividers.**—See Compasses.
**Dog Collars.**
Embossed Gilt, Pope & Stevens' list.....dis 30&10 %
Leather, Pope & Stevens' list.....dis 40 %
Brass, Pope & Stevens' list.....dis 40 %
**Door Springs.**
Torrey's Rod, regular size.....₩ doz $1.30
Gray's.....₩ gro, $20.00, dis 20 %
Bee Rod.....₩ gro, $20.00, dis 20 %
Warner's No. 1, ₩ doz. $2.50; No. 2, $3.30. dis 40&10@50 %
Gem (Coil), list April 19 1886.....dis 10 %
Star (Coil), list April 19, 1886.....dis 20 %
Victor (Coil).....dis 60 @ 60&10 %
Champion (Coil).....dis 60&10 @ 60&10&10 %
Philadelphia.....5 in., $5.00; 8 in., $7.75, dis 30 %
Cowell's.....No. 1, ₩ doz $18.00; No. 2, $15.00, dis 50 %
Rubber, complete.....₩ doz $4.50, dis 55&10 %
Hercules.....dis 50 %
Shaw Door Check and Spring.....dis 25 @ 30 @ 35 %
Elliott's Door Check and Spring.....dis 25 %
**Drawing Knives.**
Witherby and Douglas } dis 75 @ 75&5 %
P., S. & W.
New Haven and Middlesex
Merrill.....dis 60&10&10 %
Watrous.....dis 15&10 @ 25 %
L. & I. J. White.....dis 20&5 %
Bradley's.....dis 35 %
Adjustable Handle.....dis 20 @ 25 %
Wilkinson's Folding.....dis 25 @ 25&5 %
**Drills and Drill Stocks.**
Blacksmiths'.....each, $1.60 @ $1.65
Blacksmiths' Self-Feeding.....each, $7.50, dis 20 %
Breast, P. S. & W.....dis 40&10 %
Breast, Wilson's.....dis 30&5 %
Breast, Millers Falls.....each, $3.00 dis 25 %
Breast, Bartholomew's.....each, $2.50, dis 25&10 @ 40 %
Ratchet, Merrill's.....dis 20 @ 20 & 5 %
Ratchet, Ingersoll's.....dis 25 %
Ratchet, Parker's.....dis 20 @ 20&5 %
Ratchet, Whitney's.....dis 20&10 %
Ratchet, Weston's.....dis 20@25 %
Ratchet, Moore's Triple Action.....dis 25 @ 30 %
Whitney's Hand Drill, Plain, $11.00, Adjustable, $12.00.....dis 20&10 %
Wilson's Drill Stocks.....dis 10 %
Automatic Boring Tools.....each, $1.75 @ $1.85
*Twist Drills—*
Morse.....dis 50&10 %
Standard.....dis 50&10 %
Syracuse.....dis 50&10 %
Cleveland.....dis 50&10 %
Williams.....dis 50&10&10 %
**Drill Bits.**—See Augers and Bits.
**Drill Chucks.**—See Chucks.
**Dripping Pans.**
Per lb.....5¼¢ @ 5½¢

**Egg Beaters.**
Dover.....₩ doz., $2.50
National.....₩ doz $4.50, dis 33⅓ %
Family (T. & S. Mfg. Co.).....₩ gro, $17.00@$18.00
Standard (Standard Co.).....₩ gro, $10.00
Kingston (Standard Co.).....₩ gro, $7.50
Acme (Standard Co.).....₩ gro, $7.00
Duplex (Standard Co.).....₩ gro, $12.00
Rapid (Standard Co.).....₩ gro, $15.00
Triumph (T. & S. Mfg. Co.).....₩ gro, $10.50@$11.50
Advance No. 1.....₩ gro $10.50
Advance, No. 2.....₩ gro $10.00
Bryant's.....₩ doz $2.00
Ayres' Spiral.....₩ gro $5
**Electric Bell Sets.**—Wollensak's.....dis 20 %

**Emery.**

| | No. 4 to 46 gr. | No. 54 to 150 gr. | Flour, CF, F FF. |
|---|---|---|---|
| Kegs, ₩ lb | 4¢ | 4¼¢ | 2½¢ |
| ½ kegs, ₩ lb | 4¼¢ | 4½¢ | 2¾¢ |
| ¼ kegs, ₩ lb | 4½¢ | 4¾¢ | 3¢ |
| 10-lb cans, ₩ lb | 6¢ | 6¢ | 5¢ |

**Enameled and Tinned Ware.**—See Hollow-Ware.
**Escutcheon Pins.**
Iron and Brass, list Nov 11, 1885. dis 50&10 @ 50&10&5
**Escutcheons.**
Door Lock.....Same discounts as Door Locks
Brass Thread.....dis 60 @ 60&10 %
Wood.....dis 25 %

**Faucets.**
Fenn's.....dis 40 %
Bohren's Patent Rubber Ball.....dis 25 %
Fenn's Cork Stops.....dis 33⅓ %
Star.....dis 60 @ 60&5 %
Frary's Patent Petroleum.....dis 40&10&2 %
West's Patent Key.....dis 50&10 %
Anchor Lock.....dis 45 %
Metallic Key, Leather Lined.....dis 55&10 @ 60&10 %
Cork Lined.....dis 70 @ 70&10 %
Burnside's Red Cedar.....dis 50 %
Burnside's Red Cedar, bbl. lots.....dis 50&10 %
J. Sommer's Best Block Tin Key.....dis 40 %
J. Sommer's Cork Lined, 1st quality.....dis 50 %
J. Sommer's Diamond Lock.....dis 40 %
Self-Measuring, Enterprise...₩ doz $36.00—dis 20&10 %
Self-Measuring, Lane's.....₩ doz $36.00—dis 25&10 %
Self-Measuring, Victor.....₩ doz $36.00—dis 25&10 %
**Felloe Plates.**.....₩ lb 6 @ 6½¢
**Fifth Wheels.**—Derby and Cincinnati .dis 45&5 %
**Files.**
*Domestic—*
Best brands.....dis 60&10 @ 60&10&10 %
Good brands.....dis 60&10&10 @ 70 %
Fair brands.....dis 70 @ 70&10 %
Heller's Horse Rasps.....dis 50&10 @ 50&10&5 %
*Imported—*
J. & Riley Carr.....List, April 1, 1883, dis 15 %
J. & Riley Carr Horse Rasps.....dis 10 %
Moss & Gamble.....List April 1, 1883, dis 15 %
Butcher.....Butcher's list, dis 20 %
Stubs.....Stubs list, dis 25 @ 30 %
Turton's.....Turton's list dis. 20 @ 25 %
Greaves' Horse Rasps.....American list, dis. 60 %
**Fluting Machines.**
Knox, 4½-inch Rolls.....$3.25 each } dis 35 %
Knox, 6-inch Rolls.....$3.60 each
Eagle, 3½-inch Roll.....$2.15, dis 35 %
Eagle, 5½-inch Roll.....2.85, dis 35 %
Crown, 4½ in., $3.50; 6-in., $4.00; 8-in., $6.50 each, dis 35 %
Crown Jewel.....6-in., $3.50 each, dis 35 %
American, 5-in., $3; 6-in., $3.40; 7-in., $4.50 each, dis 35 %
Domestic Fluter.....$1.50 each, net
Geneva Hand Fluter, White Metal..₩ doz $12, dis 25 %
Crown Hand Fluter, Nos. 1, $15; 2, $12.50; 3, $10. dis 30 %
Shepard Hand Fluter, No. 85.....₩ doz $15.30, dis 40 %
Shepard Hand Fluter, No. 110.....₩ doz $11, dis 40 %
Shepard Hand Fluter, No. 95.....₩ doz $8, dis 40 %
Clark's Hand Fluter.....₩ doz $15.00, dis 35 %
Combined Fluter and Sad Iron...₩ doz $15.00, dis 30 %
Buffalo.....₩ doz $10.00 dis 10 %
**Fluting Scissors.**.....dis 45 %
**Forks.**—Hay, Manure, &c.. Asso. list. dis 60&10&10 %
Hay, Manure, &c., Phila. list.....dis 60 @ 60&5 %
Plated, see Spoons.
**Freezers, Ice-Cream.**
Leading Goods.....dis 60&2 @ 60&5 %
**Fruit and Jelly Presses.**
Enterprise Mfg. Co.....dis 20&10 @ 33⅓ %
Henis.....₩ doz $4.50
**Fry Pans.**
Central Stamping Co.'s list.....dis 40&10 %

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| ₩ doz. | $1.50 | 1.75 | 2.00 | 2.25 | 2.50 | 2.75 | 3.25 | 3.75 | 4.25 |

Sidney Shepard & Co.....dis 65&10 %
Acme.....dis 60 @ 60&5 %
Iron Clad Mfg. Co.'s list.....dis 70&10 @ — %

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| ₩ doz. | $3.00 | 3.75 | 4.25 | 4.75 | 5.25 | 6.00 | 7 00 | 8.00 | 9.00 |

**Gauges.**
Marking Mortise, &c.....dis 60&10 %
Wire, low list.....dis 10&10 %
Wire, Wheeler, Madden & Co.....dis 10 %
Wire, Morse's.....dis 50 @ 50&5 %
Wire, Brown & Sharpe's.....dis 10 @ 20 %
**Gimlets.**—Nail and Spike.....dis 50&10&5 %
"Eureka" Gimlets.....dis 40&10 %
"Diamond" Gimlets.....dis 40&10 %
Double Cut, Shepardson's.....dis 45 %
Double Cut, Ives'.....dis 50&10 @ 60 %
Double Cut, Douglass'.....dis 40 %
"Bee".....₩ gross $12, dis 25 %
**Glue Pots.**
Tinned and Enameled.....dis 30@35 %
Family, Howe's "Eureka".....dis 40 %
Family, L. F. & C.'s "Handy".....dis 50 %
**Grindstone Fixtures.**
Sargent's Patent.....dis 70&10 %
Reading Hardware Co.....dis 33⅓&10 %

**Hack Saws.**—See Saws.
**Halters.**—Covert's Pat. ½ Jute.....dis 50&10&2 %
Covert's Hemp Horse and Cattle Tie.....dis 50&10&2 %
Covert's Jute Horse and Cattle Ties.....dis 60&2 %
**Hammers.**
Maydole's.....List Dec. 1, 1885, dis 25 @ 25&10 %
Cheney's } List Jan. 15, 1887. Dis. 40 %
Hartford Hammer Co.'s
Buffalo Hammer Co.
Yerkes & Plumb
C. Hammond & Son
Humason & Beckley
Atna Tool Co.
Verree.....dis 5 %
Magnetic Tack, Nos. 1, 2, 3, $1.25, 1.50 and 1.75. dis 30&10 %
Nelson Tool Works.....dis 40&10 %
Warner & Nobles.....dis 20 @ 25 %
Peck, Stow & Wilcox.....dis 40 %
Sargent's.....dis 33⅓&10 %
Wilkinson's Smiths'.....10½¢ @ 11¢ ₩ lb
*Heavy Hammers and Sledges—*
3 lb and under.....₩ lb 40¢ } dis 60 %
3 to 5 lb.....₩ lb 36¢
Over 5 lb.....₩ lb 30¢
**Hand Cuffs and Leg Irons.**
Providence Tool Co., Hand Cuffs, $15.00 ₩ doz..dis 10 %
Providence Tool Co., Leg Irons, $25.00 ₩ doz....dis 10 %
Tower's.....dis 25 %
Daley's Improved Hand Cuffs: 2 Hands, Polished, ₩ doz, $48; Nickeled, $57; 3 Hands, Polished, ₩ doz, $72; Nickeled, $84.....dis 20 %
**Handles.**
*Iron, Wrought or Cast.—*
Door or Thumb.

| Nos. | 0 | 1 | 2 | 3 | 4 | |
|---|---|---|---|---|---|---|
| Per doz.. | $0.90 | 1.00 | 1.18 | 1.35 | 1.50 | dis 60&10&10 % |

Roggin's Latches.....₩ doz. 30¢ @ 35¢
Bronze Iron Drop Latches.....₩ doz. 70¢ net
Jap'd Store Door Handles—Nuts, $1.62; Plate, $1.10; no Plate, $0.88.....net
Barn Door.....₩ doz. $1.40, dis 10&10 %
Chest and Lifting.....dis 70 %
*Handles, Wood—*
Saw and Plane.....dis 40&10 @ 40&10&5 %
Hammer, Hatchet, Axe, Sledge, &c...dis 25 @ 25&5 %
Brad Awl.....₩ gross $2.00
Hickory Firmer Chisel, assorted.....₩ gross 4.50 } dis 40
Hickory Firmer Chisel, large.....₩ gross 5.00
Apple Firmer Chisel, assorted.....₩ gross 5.00
Apple Firmer Chisel, large.....₩ gross 6.00
Socket Firmer Chisel, assorted.....₩ gross 3.00
Socket Framing Chisel, assorted.....₩ gross 5.00
J. B. Smith Co.'s Pat. File.....dis 50 %
File, assorted.....₩ gross 2.75 } dis 40 @ 40&10 %
Auger, assorted.....₩ gross 5.00
Auger, large.....₩ gross 7.00
Patent Auger, Ives'.....dis 25 %
Patent Auger, Douglass'.....₩ set $1.25 net
Patent Auger, Swan's.....₩ set $1.00 net
Hoe, Rake, Shovel, &c.....dis 50&10 %
*Cross Cut Saw Handles—*
Atkins' No. 1 Loop, ₩ pair, 30¢; No. 3, 22¢; No. 2 and No. 4 Reversible, 22¢.
Boynton's Loop Saw Handles.....50¢, dis 60 %
Champion.....15¢
**Hangers.**
Barn Door, old patterns.....dis 60&10&10 @ 70
Barn Door, New England.....dis 60&10&10 @ 70 %
Samson Steel Anti-Friction.....dis 55 %
Orleans Steel.....dis 55 %
Hamilton Wrought Wood Track.....dis 55 %
U. S. Wood Track.....dis 65 %
Champion.....dis 60&10 %
Rider and Wooster, Medina Mfg. Co.'s list.....dis 70 %
Climax Anti-Friction.....dis 55 %
Climax Steel Anti-Friction.....dis 50 %
Zenith for Wood Track.....dis 55 %
Reed's Steel Arm.....dis 40 %
Challenge.....dis 50 %
Sterling Improved (Anti-Friction).....dis 65&10 %
Victor, No. 1, $15; No. 2, $16.50; No. 3, $18...dis 50&2 %
Cheritree.....dis 50&5 %
Kidder's.....dis 50&10 @ 60 %
The "Boss".....dis 60 %
Best Anti-Friction.....dis 60 %
Duplex (Wood Track).....dis 60 %
Terry's Patent.....₩ doz. pr., 3½ in. $10; 5 in., $12.....dis 40&10 @ 50 %
Cronk's Patent....No. 4, $12; No. 5, $14.40; No. 6, $18 .....dis 50&10 @ 50&15 %
Wood Track, Iron Clad..₩ ft. 10¢, dis 50&10 @ 50&15 %
Architect.....₩ set $6.00, dis 20 %
Eclipse.....dis 20&10
Felix.....₩ set $4.50, dis 20 %
Richards'.....dis 20&10@20&10&10 %
Lane's Steel Anti-Friction.....dis 40&10 %
The Ball Bearing Door Hanger....dis 20&10 @ 25&10 %
Warner's Patent.....dis 20@20&10 %
Stearns' Anti-Friction.....dis 20 @ 20&10 %
Faultless.....dis 40 @ 40&5 %
American.....₩ set $6; dis 20&10 %
Rider & Wooster, No. 1, 62½¢; No. 2, 75¢.....dis 40 %
Paragon, Nos. 1, 2 and 3.....dis 40@40&10 %
Paragon, Nos. 4, 5, 5½ and 6.....dis 25&5 %
Crescent.....dis 60@60&10 %
**Harness Snaps.**—See Snaps.
**Hatchets.**—List Jan. 1, 1886.
Isaiah Blood.....dis 35 @ 40 %
Hunt's Shingling Lath and Claw.....dis 40&5 %
Hunt's Broad.....dis 40 %
Hurd's.....dis 40&5 @ 40&10&5 %
Yerkes & Plumb.....40&5&2 %
Underhill Edge Tool Co.....dis 40&5 @ 40&10 %
C. Hammond & Son.....dis 40&10 @ 50 %
Simmons.....dis 35 @ 40 %
Peck's.....dis 40&10 @ 40&10&5 %
Kelly's.....dis 50@50&5 %
Sargent & Co.....dis 50 %
Ten Eyck Edge Tool Co.....dis 40&10@40&10&5 %
Collins, following list.....dis 10 %

| | Nos. 1 2 3 | | | |
|---|---|---|---|---|
| Shingling | ₩ doz | $5.50 | $6.00 | $6.50 |
| Claw | ₩ doz | 6.00 | 6.50 | 7.00 |
| Lathing | ₩ doz | 5.50 | 6.00 | 6.50 |

**Hay Knives.**
Lightning.....₩ doz $18, dis 25 %
Electric.....₩ doz $9.50 @ $10.50
Gem.....₩ doz $12.50 @ $13.50
Wadsworth's.....dis 40&5 %
Heath Patent.....₩ doz $13 @ $13.50
Carter's Needle.....₩ doz $12.50 @ $13.50
**Hinges.**
*Wrought Iron Hinges—*
Strap and T.....dis 65&5&2 %
Screw Hook and Strap { 8, 10, 12 in.. ₩ lb.....4 @ 4¼¢ / 14 to 36 in. ₩ lb.....3 @ 3¼¢
Heavy Welded Hook { 8 to 12 in., ₩ lb.....4 @ 4¼¢ / 14 in. & up. ₩ lb.....3 @ 3¼¢
Screw Hook and Eye..... { ½ in....₩ doz $1.50 / ⅝ in....₩ doz $2.45 / ¾ in....₩ doz $3.80 } dis 10 %
Rolled Blind Hinges, Nos. 32 and 34.....dis 50&10 %
Rolled Blind Hinges, Nos. 232 and 234.....dis 55&10 %
Rolled Plate.....dis 70&10 %
Rolled Raised.....dis 70&10 %
Plate Hinges "Providence" { 8, 10 & 12 in., ₩ lb.....4¼¢ / over 12 in., ₩ lb.....3¼¢
*Spring Hinges—*
Geer's Spring and Blank Butts.....dis 40 %
Union Spring Hinge Co.'s list, March, 1886...dis 20 %
Acme, Crown, Empire and U. S.....dis 30 %
American, Gem, and Star, Japanned.....dis 20 %
American, Gem, and Star, Bronzed.....net
Oxford, Bronze and Brass.....net
Barker's Double Acting.....dis 20&10 %
Union Mfg. Co.....dis 25 %
Bommer's.....dis 30 %
Buckman's.....dis 25 %
Chicago.....dis 30 %
*Gate Hinges—*
Western.....₩ doz $4.40, dis 55 %
N. E.....₩ doz $7.00, dis 55 %
N. E. Reversible.....₩ doz $5.20, dis 55 %
Clark's, Nos. 1 2 3.....dis 60&10 @ 60&10&5 %
N. Y. State.....₩ doz $5.00, dis 55 %
Automatic.....₩ doz $12.50, dis 50 %
Common Sense.....₩ doz pair $4.50, dis 50 %
Seymour's.....dis 45&10 %
Shepard's, Nos. 1, 2, 10 and 20.....dis 60&10 %
Shepard's, No. 3.....dis 60&5 %
Reed's Latch and Hinges.....₩ doz sets $12, dis 50 %
**Hoes.**
*Handled—*
Garden, Mortar, &c.....dis 60&10&10 %
Planter's, Cotton, &c.....dis 60&10&10 %
Warren Hoe.....dis 60 %
Magic.....₩ doz $4.75
*Eye—*
D. & H. Scovil.....dis 15 %
Lane's Crescent Scovil Pattern.....dis 45 %
Lane's Crescent Planters Pattern.....dis 45 & 5 %
Maynard. S. & O. Pat.....dis 45&5 %
Sandusky Tool Co., " ".....dis 60 %
Hubbard & Co., " ".....dis 60 %
Bare " ".....dis 60 %
Grub.....dis 60 @ 60&10 %
**Hog Rings and Ringers.**
Hill's Improved Ringers.....₩ doz. $5.50 @ 5.75
Hill's Old Style Ringers.....₩ doz. $3.00 @ 3.25
Hill's Tongs.....₩ doz. $5.50 @ 6.00
Hill's Rings.....₩ doz boxes, $2.00 @ 2.25
Perfect Rings.....₩ doz boxes $1.75 @ 2.00
Perfect Ringers.....₩ doz. $2.50
Blair's Hog Ringers.....₩ doz. $2.60
Blair's Hog Rings.....₩ doz. $1.10 @ 1.15
Champion Ringers.....₩ doz $2.25
Champion Rings, Double.....₩ doz. $2.25
Brown's Ringers.....₩ doz. $2.25
Brown's Rings.....₩ doz. $1.25 @ 1.35
**Hoisting Apparatus.**
"Moore's" Hand Hoist, with Lock Brake.....dis 15 %
"Moore's" Differential Pulley Block.....dis 20 %
**Holders, Tool.**
Balz Pat.....₩ doz $4; dis 25 %
**Hollow-Ware.**
*Iron—*
Stove Hollow-Ware, Ground. dis. 60&10 @ 60 & 10 &5 %
Stove Hollow-Ware, Unground.....dis. 70 @ 70 & 5 %
Enameled and Tinned Hollow-Ware—
Kettles.....dis 50&10 %
Oval Boilers, Saucepans and Glue Pots dis 30 @ 35 %
Gray Enameled Ware.....dis 40 @ 40&5 %
Agate and Granite Ware.....dis 25 %
Rustless Hollow-Ware.....dis 50 @ 50&5 %
Galvanized Tea-Kettles—

| Inch | 6 | 7 | 8 | 9 |
|---|---|---|---|---|
| Each | 55¢ | 60¢ | 65¢ | 75¢ |

*Silver Plated—*
Reed & Barton.....dis 40 %
Meriden Britannia Co.....dis 40 %
Simpson, Hall, Miller & Co.....dis 40 %
Rogers & Brother.....dis 40 %
Hartford Silver Plate Co.....dis 50 %
William Rogers Mfg. Co.....dis 50 %
**Hooks.**
*Cast Iron—*
Bird Cage, Sargent's list.....dis 60&10&10 %
Bird Cage, Reading.....dis 60&10&10 %
Clothes Line, Sargent's list.....dis 60&10 %
Clothes Line, Reading list.....dis 66⅔&10 %
Ceiling, Sargent's list.....dis 55&10 %
Harness, Reading list.....dis 60&10&10 %
Coat and Hat, Sargent's list.....dis 55&10 %
Coat and Hat, Reading.....dis 60&10 %
*Wrought Iron—*
Cotton.....₩ doz $1.25
Cotton Pat. (N. Y. Malleable Handle W'ks).....dis 30 %
Tassel and Picture (T. & S. Mfg. Co.).....dis 50 %
Wrought Staples, Hooks, &c.....See Wrought Goods
Bench Hooks.....See Bench Stops
*Wire—*
Wire Coat and Hat, Gem, list April, 1886.....dis 45 %
Wire Coat and Hat, Miles', list April, 1886.....dis 45 %
Belt.....dis 75&10 @ 80 %
Wire Screw Hooks and Eyes..See Bright Wire Goods
Grass.....₩ doz $2.00
Bush.....dis 55 @ 60 %
Whiffletree—Patent.....dis 55 %
Hooks and Eyes—Malleable Iron.....dis 70 %
Hooks and Eyes—Brass.....dis 60&10&10 %
Fish Hooks, American.....dis 40&10 %
**Horse Nails.**

| Nos. | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|
| Ausable | 28¢ | 26¢ | 25¢ | 24¢ | 23¢ | dis 25&10@25&10&10 % |
| Clinton, Fin. | 24¢ | 22¢ | 21¢ | 20¢ | 19¢ | dis 25&10@25&10&10 |
| Essex | 28¢ | 26¢ | 25¢ | 24¢ | 23¢ | dis 25&10@25&10&10 |
| Putnam | 24¢ | 22¢ | 21¢ | 20¢ | 19¢ | dis 5&7 @ 5&7&5 % |
| Vulcan | 23¢ | 21¢ | 20¢ | 19¢ | 18¢ | dis 12½&5 % |
| Northwest'n | 25¢ | 23¢ | 22¢ | 21¢ | 20¢ | dis 25 @ 25&5 % |
| Globe | 23¢ | 21¢ | 20¢ | 19¢ | 18¢ | dis 12½&5&2½ % |
| A. C. | 25¢ | 23¢ | 22¢ | 21¢ | 20¢ | dis 25&5 @ 25&10 % |
| C. B.-K. | 25¢ | 23¢ | 22¢ | 21¢ | 20¢ | dis 25&5 @ 25&10 % |
| Champlain | 28¢ | 26¢ | 25¢ | 24¢ | 23¢ | dis 25&10@25&10&10 % |
| New Haven | 28¢ | 26¢ | 25¢ | 24¢ | 23¢ | dis 25&10@25&10&10 % |
| Saranac | 23¢ | 21¢ | 20¢ | 19¢ | 18¢ | dis 30&5 % |
| Champion | 25¢ | 23¢ | 22¢ | 21¢ | 20¢ | dis 10&10&10 % |
| Capewell | 28¢ | 26¢ | 25¢ | 24¢ | 23¢ | dis 35&5 @ 35&10 % |
| Star | 23¢ | 21¢ | 20¢ | 19¢ | 18¢ | dis 10&10&10 % |

**Horse Shoes.**—See Shoes, Horse.
**Hose, Rubber,** competition.....75&10 @ 80
N. Y. B. & P. Co., Standard.....dis 60 %
N. Y. B. & P. Co., Dundee.....dis 70&5 %

**Ice Picks, Chisels, &c.**
American Ice Chisel Pol'd.....₩ doz $3.00, dis 20 %
National Ice Chisel.....₩ doz $6.25, dis 20 %
Novelty Ice Breakers.....₩ doz $6.25, dis 20 %
White's Sliding Head Picks.....₩ doz $2.50 dis 40 %
Dunlap's Ring Picks.....₩ doz $2.00, dis 15 %
Wood Head Picks, Sargent's....₩ doz $1.60, dis 50&10 %
Iron Head Picks, Sargent's.....₩ doz $1.25, dis 50&10 %
Ice Mallets, Pick in handle.....₩ doz $2.00, dis 15 %
Ice Axes, Small Cast or Mall...₩ doz $1.25, dis 20&10 %
Combination Ice Tools.....₩ doz $2.00 net
Acme Ice Pick and Tongs...₩ gross $55.00, dis 50&10 %
Roger's Lightning Ice Chisel.....₩ gross $28.50
**Ice Cream Freezers.**—See Freezers.
**Ice Tongs.**
Champion, S. S. & Co.....₩ doz $4.00, dis 25&10 %
Family.....₩ doz $2.75, dis 20@25 %
**Jack Screws.**—See Screws.

**Kettles.**
Brass, 7 to 17 in. inclusive.....₩ lb 20¢ net
Brass larger than 17 inches.....₩ lb 22¢ net
Enameled and Tea Kettles.....See Hollow-Ware
**Keys.**
Lock Asso'n list Jan. 1, 1885.....dis 60&2 %
Eagle, Cabinet, Trunk and Padlock.....dis 40&2 %
Hotchkiss' Brass Blanks.....dis 40 %
Hotchkiss' Copper and Tinned.....dis 40 %
Hotchkiss' Padlock and Cabinet.....dis 35 %
Ratchet Bed Keys.....₩ doz $4.00, dis 15 %
**Knife Sharpeners.**
Parkin's Applewood Handles.....₩ doz $6.00, dis 40 %
Parkin's Rosewood or Cocobolo...₩ doz $9.00, dis 40 %
**Knives.**
Wilson's Butcher Knives.....dis 25 @ 30 %
Ames' Butcher Knives.....dis 25 %
Nichols' Butcher Knives.....dis 40&10
Ames' Shoe Knives.....dis 20@25 %
Ames' Bread Knives.....₩ doz $1.50, dis 15 @ 20 %
Moran's Shoe and Bread Knives.....dis 20 %
Goodell Co., Butcher, Shoe, Bread, &c...dis 25@33⅓ %
Hay and Straw.....See Hay Knives
Table and Pocket.....See Cutlery
**Knobs.**
Door Mineral } List Jan. 1, '87 dis 60&2 %
Door Por. Jap'd
Door Por. Por
Door Por. Plated
Hemacite Door Knobs, new list.....dis 40@40&10 %
Yale & Towne Wood Knobs, list Dec., 1885.....dis 40 %
Furniture Plain.....75¢ gross inch. dis 10 %
Furniture, Wood Screws.....dis 25&10 %
Base, Rubber Tip.....dis 70&10&5 %
Picture, Judd's.....dis 60&10&10 @ 70 %
Picture, Sargent's.....dis 66⅔&10 %
Picture, Hemacite.....dis 35&5 %
Shutter, Porcelain.....dis 65&10 %
Carriage, Japanned.....₩ gross 80¢, dis 60&10 %

**Ladles.**
Melting, Sargent's.....dis 55&10 %
Melting, Reading.....dis 35&10 %
Melting, Monroe's Patent.....₩ doz. $4.00, dis 40 %
Melting, P. S. & W.....dis 35&10 @ 40 %
Melting, Warner's.....dis 30 %

**Lanterns.**
Tubular, No. 9, without Guards........₩ doz $5.75
Tubular, Liftwire, No. 0, without Guards ₩ doz $8.50
Tubular, Hinge Tip No. 0, without Guards, ₩ doz $6.25
Tubular, Bottom Lift, without Guards ₩ doz $6.25
Tubular, U. S. Safety Lift Wire, no Guards, ₩ doz $5.00
Guards for Tubulars, add ₩ doz...
Police, Small, $6.00; Med. $7.25; Large, $9.75. dis 20@25
Porter's Tin R. R............$10 dis 20

**Lawn Mowers.** Standard Machines.....dis 50&5 %
Cheaper Machines..............dis 50&10 @ 60 %

**Lemon Squeezers.**
Porcelain Lined, No. 1........₩ doz. $6.00, dis 25&30
Wood, No. 2..................₩ doz. $3.00, dis 35 %
Wood, Common..................₩ doz $1.70 @ 1.75
Dunlap's Improved..............₩ doz. $3.75, dis 20
Sammis'......No. 1, $5; 2, $9; 12, $18 ₩ doz. dis 25&10
Jennings' "Star"..................₩ doz $2.50
The "Boss"......................₩ doz $2.50
Dean's.............Nos. 1, ₩ doz $6.50; 2, $3.35; 3, $1.90
Little Giant..................dis 50 @ 50&5 %
King..............................dis 40&5 %

**Lines.**
Cotton and Linen Fish, Draper's..............dis 50 %
Draper's Chalk..............................dis 60 %
Draper's Mason's Linen, 84 ft., No. 1, $1.25; No. 2, $1.75; No. 3, $2.25; No. 4, $2.75; No. 5, $3.25..dis 25 %
Cotton Chalk..................................dis 55 %
Samson, Cotton, No. 4, $2; No 4½, $2.50........dis 10 %
Silver Lake, Braided, Nos. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50 ₩ gross...............dis 25 %
Masons' Linen, No. 3½, $1.50; No. 4, $2; No. 4½, $2.50
Masons' Colored Cotton......................dis 45
Wire Clothes, No. 18, $3.50; No 19, $3.25; No. 20, $2.75.
Ventilator Cord, Samson Braided, White or Drab Cotton...............$7.50 ₩ doz. dis 20

**Locks, Padlocks, Cabinet Locks, &c.**
*Door Locks, Latches, &c.—*
List, Jan. 1, 1887..........................dis 60&2 %
Reading Hardware Co. (list Feb. 2 '85).dis 70@70&10 %
Perkins' Burglar Proof..................dis 60&25 %
Plate......................................dis 33⅓&2 %
F. Many's "Extension Cylinder"........$10.50 ₩ doz
Barnes Mfg. Co.............................dis 40 %
Yale Flat Key.............................dis 33⅓ %
Dietz Flat Key.............................dis 30 %
L. & C. Round Key Latches................dis 30&10 %
L. & C. Flat Key Latches..............dis 33⅓&10 %
Romer's Night Latches......................dis 20 %
Yale new list.............................dis 33⅓ %
"Shepardson" or "U. S."....................dis 35 %
"Felter" or "American"..................dis 40&10 %
Seed's N. Y. Hasp Lock.....................dis 25 %
*Cabinet—*
Eagle, Gaylord Parker and Corbin, } List March, '84, revised Jan. 1, '85....dis 40&2
Deitz, Nos. 36 to 39.......................dis 40 %
Deitz, Nos. 51 to 63...................dis 40 &10 %
Dietz, Nos. 86 to 96.......................dis 30 %
Stoddard Lock Co...........................dis 30 %
"Champion" Night Latches...................dis 40 %
Barnes Mfg. Co.............................dis 40 %
Eagle and Corbin Trunk..................dis 25&2 %
"Champion" Cabinet and Combination....dis 33⅓ %
Yale......................................dis 33⅓ %
Romer's....................................dis 25 %
*Padlocks—*
Standard list, Dec. 23, 1884.......... dis 75 @ 75&5 %
Yale Lock Mfg. Co. s.....................dis 33⅓ %
Eagle......................................dis 25&2 %
Eureka, Eagle Lock Co....................dis 40&2 %
Romer's, Nos. 0 to 91......................dis 35 %
Romer's, Nos. 200 to 505...................dis 20 %
A. E. Dietz................................dis 40 %
"Champion" Padlocks......................dis 33⅓ %
Hotchkiss..................................dis 30 %
"Star".....................................dis 15 %
"Horse Shoe." ₩ doz.. $9...................dis 40 %
Barnes Mfg. Co.............................dis 40 %
Nock's.....................................dis 30 %
Brown's Patent.............................dis 25 %
Scandinavian...............................dis 90 %
Fraim's Pat. Scandinavian, new list (low)....dis 60 %

**Lumber Tools.**
Ring Peavies, "Blue Line" Finish..........₩ doz $20.00
Ring Peaves, Common Finish................₩ doz $18.00
Steel Socket Peavies......................₩ doz $21.00
Mall. Iron Socket Peavies.................₩ doz $19.00
Cant Hooks, "Blue Line" Finish............₩ doz $16.00
Cant Hooks, Common Finish.................₩ doz $14.00
Cant Hooks, Mall. Socket Clasp, "Blue Line" Finish......₩ doz $16.00
Cant Hooks, Mall. Socket Clasp Common Finish............₩ doz $14.50
Cant Hooks, Clip Clasp, "Blue Line" Fin. ₩ doz $14.00
Cant Hooks, Clip Clasp, Common Finish..₩ doz $12.00
Hand Spikes................₩ doz 6 ft., $15.00; 8 ft., $20

| | | | | | |
|---|---|---|---|---|---|
| Pike Poles, Pike & Hook, | 12 ft. | 14 ft. | 16 ft. | 18 ft. | 20 ft. |
| ₩ doz | $11.50 | 12.50 | 14.50 | 17.50 | 21.50 |
| Pike Poles, Pike only, ₩ doz | 10.00 | 11.00 | 13.00 | 16.00 | 20.00 |
| Pike Poles not Ironed, ₩ doz | 6.00 | 7.00 | 9.00 | 12.00 | 16.00 |
| Setting Poles, ₩ doz | 14.00 | 15.00 | 17.00 | .... | .... |

Swamp Hooks...............................₩ doz $18.00
Landing Blocks............................₩ doz $22.50
Skidding Tongs............................₩ doz $51.00
Log Binders...............................₩ doz $26.00
Bended Boot Calks, 1 to 5 M, dis 25 %; 5 to 10 M, dis 30 %
Square Steel Boot Calks....................dis 40 %
Chain Rafting Dogs.........................₩ 100 $12.50
Ring Rafting Dogs...₩ 100, med., $10.00; large, $12.00
Timber Grapples...........................₩ doz $30.00

**Lustro.**
Four-ounce bottles......₩ doz, $1.75; ₩ gro. $17.00 net

**Mallets.**
Hickory...................................dis 20&10 %
Lignumvitæ................................dis 20&10 %
Penfield Block Co, Hickory and L. V. dis 30 @ 30&10 %

**Mattocks.**—Regular list.........dis 60&5 @ 60&10 %

**Meat Cutters.**

| | | | | | |
|---|---|---|---|---|---|
| Dixon's—Nos. | 1 | 2 | 3 | 4 | |
| ₩ doz | $14.00 | 17.00 | 19.00 | 30.00 | —dis 45 % |
| Woodruff's—Nos. | 100 | 150 | | | |
| ₩ doz | $15.00 | 18.00 | | | —dis 45 % |
| Champion—Nos. | 200 | 300 | 400 | | |
| ₩ doz | $22.00 | 27.00 | 40.00 | | —dis 45 % |
| Hales' Pattern, Nos. | 11 | 12 | 13 | | |
| ₩ doz | $27.00 | 33.00 | 45.00 | | dis 70&5@70 & 10 % |

American...................................dis 30 %

| | | | | | |
|---|---|---|---|---|---|
| Nos. | 1 | 2 | 3 | 4B | |
| Each | $5.00 | 7.00 | 10.00 | 25.00 | 50.00 60.00 |

Enterprise.................................dis 30 %

| | | | | | |
|---|---|---|---|---|---|
| Nos. | 10 | 12 | 22 | 32 | 42 |
| Each | $3 00 | 2.50 | 4.00 | 6.00 | 10.00 |

Pennsylvania............................dis 40&10 %

| | | | | |
|---|---|---|---|---|
| Nos. | 1 | 2 | 3 | 00 |
| ₩ doz | $24.00 | 28.00 | 36.00 | 28.00 |

Miles' Challenge..Nos. 1 2 3
₩ doz..$22.00 30 00 40.00—dis 45@45&10 %
Home No. 1..................$32 ₩ doz, dis 66⅔&10 %
Kieser's No. 55............$40 ₩ doz, dis 40 @ 40&10 %
Kieser's Gem...............$25 ₩ doz, dis 40 @ 40&10 %
Kieser's Monarch...........$45 ₩ doz, dis 40 @ 40&10 %
Kieser's Butcher..............$40 each, dis 20 @ 20&5 %
Draw Cut..Nos.. 5 2 6 8
Each....$50.00 75.00 80.00 225.00—dis 20 @ 25 %
Beef Shavers (Enterprise Mfg. Co.)....dis 20&10 @ 30 %
Chadborn's Smoked Beef Cutter..........₩ doz, $66.00

**Mincing Knives.**
Am. (2d quality), ₩ gro, 1 blade, $7; 2 blades, $12; 3 blades, $18...................................net
Lothrop's.................................dis 20&10 %
Smith's, ₩ doz, Single, $2.00; Double, $3....dis 40@45 %
Knapp & Cowles........................dis 50&10@60 %

**Molasses Gates.**—Stebbins' Pat.........dis 70&10 %
Stebbins' Genuine......................dis 66⅔&10 %
Stebbins' Tinned Ends.....................dis 40&10 %
Chase's Hard Metal........................dis 50&10 %
Bush's.....................................dis 20 %
Lincoln's Pattern.......................dis 66⅔&10 %
Weed's....................................dis 20&10 %
Boss Nos.. 1 2 3 4
$7.00 8.00 9.00 10.00..₩ doz, dis 60&10&10 %

**Money Drawers.**—₩ doz., $18.
**Muzzles.**—Safety. ₩ doz. $3..............dis 25 %

**Nails.**.............................See Trade Report
Wire Nails, list April 13, '86.........dis 50 @ 50&5 %
Wire Nails, Standard Penny.....₩ keg, card rate, $3.55
Wire Carpet Nails.........................See Tacks

**Nail Puller.**—Curtiss Hammer....₩ doz $9.00 net
Giant, No. 1...................₩ doz $30.00, dis 10 %
Pelican.........................₩ doz $9.00, dis 25 %
Boss...........................₩ doz $36, dis 30 %

**Nail Sets.**—Square..............₩ gro., $4.00 @ $4.25
Round.................................₩ gro., $3.25

**Nut Crackers.**
Table (Humason & Beckley Mfg. Co.)...........dis 40 %
Blake's Pattern..................₩ doz $2.00, dis 10 %
Turner & Seymour Mfg. Co....................dis 50 %

**Nuts and Washers.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Size of bolt, in... | ¼ | 5-16 | ⅜ | ½ | ⅝ | ¾ | 1 |
| Square | 8¾¢ | 6¼¢ | 5¼¢ | 4 ¢ | 3¾¢ | 3¼¢ | 3 ¢ |
| Hexagon | 19 ¢ | 12 ¢ | 8¾¢ | 6¾¢ | 5 ¢ | 4 ¢ | |
| Washers | 7¾¢ | 6¾¢ | 5¼¢ | 4 ¢ | 3½¢ | 3¼¢ | 3¼¢ |

In lots less than 100 ℔, ₩ ℔, add ½¢, 1 ℔ boxes add 1¢ to list.

**Oakum.**
Government..............................₩ ℔ 6½¢
U. S. Navy.................................₩ ℔ 6 ¢
Navy......................................₩ ℔ 5½¢

**Oilers.**—Zinc and Tin ..............dis 65&10@70 %
Brass and Copper...............dis 50&10@50&10&5 %
Malleable, Hammers' Improved, No 1, $3.60; No. 2, $4.00; No. 3, $4.40 ₩ doz...........dis 10 @ 10&10 %
Malleable, Hammers, Old Pattern, same list....dis 40 %
Prior's Patent or "Paragon" Zinc dis 60&5 @ 60&10 %
Prior's Patent or "Paragon" Brass...............dis 50 %
Olmstead's Tin and Zinc.......................dis 60 %
Olmstead's Brass and Copper...................dis 50 %
Broughton's Zinc...............................dis 60 %
Broughton's Brass..............................dis 50 %

**Packing, Steam.**
N. Y. Belting & Packing Co., Standard...dis 60 %
N. Y. B. & P. Co., Dundee...................dis 70&5 %
N. Y. B. & P. Co., Salamander..........₩ ℔ 65¢, dis 35 %
Jenkins' Standard......................₩ ℔ 80¢, dis 35 %
American Packing....................10¢ @ 11¢ ₩ ℔
Russia Packing...............................14¢ ₩ ℔
Italian Packing........................13 @ 14¢ ₩ ℔
Cotton Packing........................15 @ 17¢ ₩ ℔
Jute.....................................7 @ 8¢ ₩ ℔

**Padlocks.**—See Locks.

**Pails, Galvanized Water.**

| | | | |
|---|---|---|---|
| Quarts | 10 | 12 | 14 |
| Hill's Light Weight, ₩ doz | $2.75 | 3.00 | 3.25 |
| Hill's Heavy Weight, ₩ doz | 3.00 | 3.25 | $3.75 |
| Whiting's | 2.75 | 3.00 | 3.25 |
| Sidney Shepard & Co | 26.7 | .... | 3.23 |
| Iron Clad | 3.50 | .... | 4.00 |
| Fire Buckets | 2.75 | 3.25 | 3.50 |

Buckets, see Well Buckets.

**Pencils** Faber's Carpenters'.......high list, dis 50 %
Faber's Round Gilt....................₩ gro $5.25 net
Dixon's Lead..........................₩ gro $4.50 net
Dixon's Lumber........................₩ gro $6.75 net
Dixon's Carpenters'.....................dis 40&10 %

**Picks.**
Railroad, 5 to 6, $11.00; 6 to 7, $12...dis 60&5 @ 60&10 %
Adze Eye, 5 to 6, $12.00; 6 to 7, $13...dis 60&5 @ 60&10 %

**Picture Nails.**
Brass Head, Sargent's list................dis 50&10&10 %
Brass Head, Combination list...............dis 50&10 %
Porcelain Head, Sargent's list..........dis 50&10&10 %
Porcelain Head, Combination list..........dis 40&10 %
Niles' Patent...............................dis 40 %

**Pinking Irons**......................₩ doz 65¢ net

**Pipe, Wrought Iron.**
1¼ and under, Plain..........................dis 35 %
1¼ and under, Galvanized.....................dis 25 %
1½ and over, Plain...........................dis 52½ %
1½ and over, Galvanized......................dis 35 %
Boiler Tubes.................................dis 45 %

**Planes and Plane Irons.**
*Wood Planes—*
Molding.................................dis 30@30&5 %
Bench, First Quality....................dis 40@40&5 %
Bench, Second Quality................dis 50@50&10 %
Bailey's (Stanley R. & L. Co.)..............dis 30&10 %
*Iron Planes—*
Bailey's Stanley R. & L. Co.)...............dis 30&10 %
Miscellaneous Palnes (Stanley R. & L. Co.) dis 20&10 %
Victor Planes (Stanley R. & L. Co.).......dis 20&10 %
Steer's Iron Planes.....................dis 35 @ 35&5 %
Meriden Mal. Iron Co.'s Iron Planes.....dis 30&10 %
Davis's Iron Planes........................dis 30&10 %
Birmingham Plane Co .........................dis 40 %
*Plane Irons—*
Plane Irons.................................dis 20&10 %
Plane Irons, Butcher's...............$5.00 @ $5.25 to £
Plane Irons, Buck Bros........................dis 30 %
Plane Irons, Middlesex Mfg. Co., "Baldwin Iron," Single and Cut........................dis 20 @ 25 %
Double.................................dis 33⅓ @ 40 %
L. & I. J. White..............................dis 25 %

**Pliers and Nippers.**
Button's Patent.........................dis 30&10 @ 40 %
Hall's Pat. Compound Lever Cutting Nippers, No. 2, 5 in., $13.50; No. 4, 7 in., $21.00 ₩ doz dis 20&10@33⅓ %
Humason & Beckley Mfg. Co.............dis 50@50&10 %
Gas Pliers....................................dis 60 %
Gas Pliers, Custer's Nickel Plated...........dis 60&5 %
Eureka Pliers and Nippers.....................dis 40 %
Russell's Parallel............................dis 25 %
P. S. & W. Cast Steel.........................dis 50 %
P. S. & W. Tinners' Cutting Nippers....add 6 % dis 10 %
Carew's Pat. Wire Cutters.....................dis 20 %
Morrill's Parallel, per doz., $12...........dis 30&5 %

**Plumbs and Levels.**
Regular List.....................dis 70&10@70&10&10 %
Disston's..................................dis 45&10 %
Pocket Levels...................dis 70&10@70&10&10 %
Davis Iron Levels.............................dis 30 %
Davis' Inclinometers.......................dis 10&10 %

**Poppers, Corn.**
Round or Square, 1 qt..............₩ gro $14.50 @ $15
Round or Square, 2 qt.................₩ gro $25 @ $26

**Post Hole and Tree Augers and Diggers.**
Samson Post Hole Digger.....₩ doz $36.00, dis 20&10 %
Fletcher Post Hole Augers.......₩ doz $36.00, dis 20 %
Eureka Diggers..........................₩ doz $16 @ $17
Leed's...............................₩ doz $8.00 @ $9.00
Vaughan's Post Hole, Auger, per doz, $24.00 ... dis 33⅓ @ 33⅓&5 %
Kohler's Little Giant........................₩ doz $18.00
Kohler's Hercules............................₩ doz $16.00
Kohler's New Champion........................₩ doz $9.00
Schneidler..............................₩ doz $16 @ $17
Ryan's Post Hole Diggers ......................₩ doz $24
Cronk's Post Bars........ doz $60, dis 50&5 @ 50&10 %
Gibb's Post Hole Digger, ₩ doz $30...............dis 40 %

**Potato Parers.**
White Mountain........................₩ doz $5.00 @ 5.50
Antrim Combination.........................₩ doz $8.00
Hoosier....................................₩ doz $13.50

**Pruning Hooks and Shears.**
Disston's Combined Pruning Hook and Saw. ₩ doz $18.00.......................................dis 20&10 %
Disston's Pruning Hook .....₩ doz $12.00, dis 20&10 %
E. S. Lee & Co.'s Pruning Tools.................dis 40 %
Pruning Shears, Henry Pat....₩ doz $3.75 @ $4.00 net
Henry's Pruning Shears .......₩ doz $4.25 @ $4.50 net
Wheeler, M. & Co.'s Combination....₩ doz $12, dis 20 %
Dunlap's Saw and Chisel..........₩ doz $8.50, dis 30 %
J. Mallinson & Co. ........No. 1, $5.25; No. 2, $7.25

**Pulleys.**—Hot House, Awning, &c.......dis 60&10 %
Japanned Screw..............................dis 60&10 %
Brass Screw.................................dis 60&10 %
Japanned Side............................dis 66⅔&10 %
Japanned Clothes Line.......................dis 60&10 %
Empire Sash Pulley..........................dis 55 @ 60 %
Hay Fork, Solid Eye, $4.00; Swivel, $4.50 { dis 50&10 @ 50&10&5 %
Hay Fork, "Anti-Friction," 5 in. Solid, $5.70...dis 50 %
Hay Fork, "F" Common and Pat. Bushed......dis 20 %
Hay Fork, Tarbox Pat. Iron.......................dis 20 %
Hay Fork, Reed's Self-Lubricating................dis 60 %
Shade Rack......................................dis 45 %
Tackle Blocks...............................See Blocks

**Pumps.**—Cistern, Best Makers.....dis 50 @ 10&60 %
Pitcher Spout, Best Makers...dis 60&10 @ 60&10&10 %
Pitcher Spout, Cheaper Goods..dis 70&5 @ 70&10&5 %

**Punches.**
Saddlers' or Drive, good quality. .....₩ doz 60¢ @ 65¢
Bemis & Call Co.'s Cast Steel Drive...........dis 50&5 %
Bemis & Call Co.'s Springfield Socket..........dis 50&5 %
Spring, good quality ....................₩ doz $2.50 @ $2.60
Spring, Leach's Patent..........................dis 15 %
Bemis & Call Co.'s Spring and Check............dis 40 %
Solid Tinners'........................₩ doz $1.44, dis 55 %
Tinners' Hollow Punches......................dis 20&2 %

**Rail.**
Sliding Door, Wrought Brass ₩ ℔ 35¢, dis 20@25 %
Sliding Door, Bronzed Wrt. Iron...............₩ foot 7¢
Sliding Door Iron, Painted....₩ foot 4¢, dis 20&10&5 %

| | | | | |
|---|---|---|---|---|
| Barn Door, Light....Inch. | ⅝ | ¾ | ⅞ | |
| Per 100 feet | $2.50 | 3.00 | 4.40 | —dis 10 % |
| S. D. for N. E. Hangers— | Small. | Med. | Large | |
| Per 100 feet | $2.15 | 2.70 | 3.25 | net |

Terry's Wrought Iron, 5¢ ₩ foot....................net
Victor Track Rail, 7¢ ₩ foot.................dis 50&2 %

**Rakes.**
Cast Steel ......................dis 60&10 @ 60&10&10 %
Malleable.......................dis 60&10 @ 60&10&10 %
Piqua Handle and Mfg. Co......................dis 70 %
Gibbs Lawn Rake..........................$12, dis 40 %
Canton Lawn Rake...........................$9, dis 40 %

**Razors.**—J. R. Torrey Razor Co..................dis 20 %
Wostenholme & Butcher...............$10 to £, dis 10 %

**Razor Strops.**
Genuine Emerson........................dis 60 @ 60&5 %
Imitation Emerson.........₩ doz $2.00, dis 20&10&10 %
Torrey's........................................dis 20 %
Badger's Belt and Combination.....................₩ doz $2
Lamont Combination ...............................₩ doz $4

**Rivets and Burrs.**
Iron, Thousand, list October 1, 1886...............dis 65 %
Iron, Ordinary, Cooper's Block and Carriage, list Oct. 1, 1886......................................dis 60 %
Copper.............................dis 60 @ 60&5 %

**Rivet Sets**....................dis 50&2 @ 50&10 %

**Rods.**—Stair, Brass.......................dis 25&2 %
Stair Black Walnut...........................₩ doz 40¢

**Rollers.**
Barn Door, Sargent's list...................dis 60&10&10 %
Acme (Anti-Friction)..............................dis 55 %
Union Barn Door Roller............................dis 70 %

**Rope.**—Mnf'rs list, Jan. 5, 1887.
Manila.....................½ inch and larger ₩ ℔ 13 ¢
Manila...............................⅜ inch ₩ ℔ 13¼¢
Manila.......................¼ and 5-16 inch ₩ ℔ 14 ¢
Manila Tarred Rope.............................₩ ℔ 12½¢
Manila, Hay Rope...............................₩ ℔ 13 ¢
Sisal .....................½ inch and larger ₩ ℔ 11¼¢
Sisal.................................⅜ inch ₩ ℔ 11¾¢
Sisal........................¼ and 5-16 inch ₩ ℔ 12¼¢
Sisal, Hay Rope................................₩ ℔ 11¼¢
Sisal, Tarred Rope.............................₩ ℔ 10¾¢
Sisal, Single Ply Lath Yarn...................₩ ℔ 10¼¢
(Dis 1¢ ₩ ℔)
NOTE.—Lower prices on Rope are made for export
Cotton Rope...............................₩ ℔ 15 @ 18¢ net
Jute Rope.......................................₩ ℔ 7¢

**Rules.**
Boxwood.........................dis 80&10 @ 80&10&10 %
Ivory...............................dis 50 @ 55&10 %

**Sad Irons.**
From 4 to 10, at factory.... ₩ 100 ℔ $2.35 @ $2.50
Self Heating ............................₩ doz. $9.00 net
Self-Heating, Tailors'..................₩ doz. $18.00 net
Gleason's Shield and Toilet.......................dis 25 %
Mrs. Pott's Irons.................................dis 40 %
Enterprise Star Irons, new list, July 20, 1882....dis 40 %
Combined Fluter and Sad Iron...₩ doz, $15.00, dis 15 %
Fox Reversible, Self-Fluter ...........₩ doz., $24.00 net
Chinese Laundry (N. E. Butt Co.)...........8½¢, dis 15 %
New England.................................5¢, dis 15 %

**Sand Paper and Emery Paper.**
List April 19, 1886.......................dis 25 @ 20&10 %
Waddell & Co ..............................dis 30 @ 33⅓ %

**Sash Cord.**
Common........................................₩ ℔, 10¢ @ 11¢
Patent, good quality ........................₩ ℔, 13¢ @ 13½¢
White Cotton Braided, fair quality...........₩ ℔ 28¢ @ 29¢
Common Russia Sash..................................₩ ℔ 13½¢
Patent " " ......................................₩ ℔ 15¢
Cable Laid Italian " ..........................₩ ℔ 22¢ @ 23¢
India Cable Laid " ...................................₩ ℔ 13¢
Silver Lake, A Quality, White.........50¢, dis 10&10&5 %
Silver Lake, A Quality, Drab..........55¢, dis 10&10&5 %
Silver Lake, B Quality, White.....50¢, dis 10&10&10 %
Silver Lake, B Quality, Drab.........50¢, dis 10&10& 10 %
Silver Lake, C Quality, White (only).........27¢ @ 29¢
Sylvan Spring, A Quality, 50@55¢, dis 10&10@10&10&10 %
Samson, Braided, White Cotton....50¢ dis 30 @ 30&5 %
Samson, Braided, Drab Cotton.....55¢ dis 30 @ 30&5 %
Samson, Braided, Italian Hemp....55¢ dis 30 @ 30&5 %
Samson, Braided, Linen..........80¢ dis 30 @ 30&5 %

**Sash Locks.**
Clark's No. 1, $10.00; No. 2, $8.00 ₩ gross......dis 33⅓ %
Ferguson's.......................................dis 33⅓ %
Morris and Triumph, list Aug. 16, 1886.......dis 50&10 %
Walker's.........................................dis 10 %
Attwell Mfg. Co..........................dis 25 @ 33⅓ %
Reading.......................dis 66⅔&10 @ 66⅔&10&10 %
Hammond's Window Springs.......................dis 40 %
Common Sense, Japanned, Coppered and Bronzed.......................................₩ gross
Common Sense, Nickel Plated.........₩ gross $12.00 net
Universal........................................dis 30 %
Kempshall's Gravity..............................dis 60 %
Kempshall's Model...........................dis 60@60&10 %
Corbin's Daisy, list February 15, 1886..........dis 70 %
Payson's Perfect........................dis 50&10&5 @ 60 %
Huguinn's New and Improved Adjustable Sash Balances, list Jan. 5, 1887.......................dis 2 @ &5&2 %
Hugunin's New Sash Locks, list Jan. 5, '87. dis 25&5&2 %
Stoddard "Practical"............................dis 10 %
Ives Patent.......................................dis 55 %
Liesche's Nos. 100 & 110, ₩ gro. $8; 105, $10, dis 20&10 %

**Sash Weights.**
Solid Eyes, in ton lots...........................₩ ton, $22.50

**Sausage Stuffers or Fillers.**
Miles' "Challenge"..............₩ doz. $20, dis 50@50&5 %
Perry........₩ doz. No. 1, $15; No. 0, $21, dis 50@50&5 %
Draw Cut No. 4..............................each, $30.00, dis 20 %
Enterprise Mfg. Co.......................dis 20&10 @ 30 %
Silver's.......................................dis 40&10 %

**Saws.**
Disston's Circular, Mill and Cross Cut..........dis 45 %
Disston's Hand, Panel, Rip, &c..................dis 25 %
Atkins' Circular..................................dis 50 %
Atkins' Silver Steel Diamond X Cuts........₩ foot 75¢
Atkins' Concave Tooth Dexter X Cuts.......₩ foot 55¢
Atkins' Special Steel Diamond X Cuts ......₩ foot 32¢
Atkins' Champion and Electric Tooth X Cuts.........................................₩ foot 30¢
Atkins' Hollow Back X Cuts..................₩ foot 21 @ 22¢
Atkins' Shingle, Mulay, Drag, &c.................dis 45 %
W. M. & C. Hand............................dis 30 @ 30&5 %
W. M. & C. Champion X Cuts, Regular.........₩ foot 26¢
W. M. & C. X Cuts, Thin Back....................₩ foot 29¢
Peace Circular and Mill......................dis 45&10 %
Peace Hand Panel and Rip.....dis 20&10 @ 20&10&5 %
Peace Cross Cuts, Standard....................₩ foot 25¢
Peace Cross Cuts, Thin Back....................₩ foot 28¢
Peace Band Saws, all widths....................dis 20&10 %
Richardson's Circular............................dis 45 %
Richardson's Mill.................................dis 45 %
Richardson's X-Cuts, No. 1, 30¢; No. 2, 27¢; No. 3, 25¢
Boynton's Lightning Panel, Butcher, &c. ..dis 25&10 %
Boynton's Lightning X Cuts..............₩ ft 32¢ @ 33¢
Boynton's Lightning One Man X Cuts..₩ ft 38¢ @ 40¢
Boynton's Lightning Buck Saws...₩ doz $6.00, dis 10 %
*Hack Saws—*
Griffin's Hack Saws, complete............dis 40&10 @ 50 %
Griffin's Hack Saw, Blades only..........dis 40&10 @ 50 %
Star Hack Saws and Blades.........................dis 25 %
Diamond, Hack Saws and Blades.....................dis 25 %

**Saw Frames.**
White, Vermont..................................₩ gro $9 @ $10
Red, Polished and Varnished......₩ doz $1.50, dis 25 %

**Saw Sets.**
Stillman's Genuine....₩ doz $5.00 and $7.75, dis 40&5 %
Stillman's Imita..₩ doz $3.25 and $5.25, dis 40&5@40&10 %
Common Lever....................₩ doz $2.00, dis 40&5 %
Leach's..........No. 0, $8.00; No. 1, $15.00, dis 15 @ 20 %
Nash's.....................dis 20&10 @ 20&10&10 %
Hammer, Hotchkiss....................................$5.50, dis 10 %
Hammer, Bemis & Call Co.'s new Patent ...dis 30&5 %
Bemis & Call Co.'s Lever and Spring Hammer. dis 30&5 %
Bemis & Call Co.'s Plate...........................dis 10 %
Bemis & Call Co.'s Cross Cut......................dis 12½ %
Aiken's Genuine....................$13.00, dis 50&10 %
Aiken's Imitation....................$7.00, dis 55&5 %
Hart's Patent Lever.................................dis 20 %
Disston's, Star, $9, No. 15 Hammer, $5.50...dis 20&10 %
Atkins' Adjustable................................per doz $6.00
Atkins' Criterion.................................per doz $7.00
Atkins' Criterion for Hand Saws..............per doz $7.50
Morrill's, No. 1, $15.00; Nos. 3 and 4, $24......dis 40&10 %
Croissant (Keller), No. 1, $15.00; No. 2, $24.00, dis 33⅓&10 %
Boynton's No. 1, $12 ₩ doz; No. 2, $10..............dis 25 %

**Saw Tools.**
Atkins' Patent.................................per doz sets $6.00

**Scales.**
Hatch, Counter, No. 171.................................₩ doz $21
Hatch, Tea, No. 161....................................₩ doz $7.50
Union Platform, Plain.....................................$2.30 @ 2.35
Union Platform, Striped...............................$2.40 @ 2.50
Chatillon's Grocers' Trip Scales..........................dis 50 %
Chatillon's Eureka.........................................dis 25 %
Chatillon's Favorite.......................................dis 40 %
Family, Turnbull's.................................dis 30@30&10 %

**Scale Beams.**
Scale Beams, List of Jan. 12, 1882..dis 60&5 @ 60&10 %
Scale Beams, Custer..................................dis 30@33⅓ %

**Scrapers.**
Adjustable Box Scraper (S. R. & L. Co.), $6.50, dis 30&10 %
Box, 1 Handle..............................₩ doz $4.00, dis 10 %
Box, 2 Handle..............................₩ doz $6.00, dis 10 %
Defiance Box and Ship..................................dis 20&10 %
Foot............................................dis 50&10@60 %
Ship, Common.....................................₩ doz $3.50 net
Ship, Providence Tool Co..................................dis 10 %

**Screen Window and Door Frames.**
Porter's Pat. Window and Door Frame...dis 33⅓&10 %
Screen Corner Irons, Warner's....dis 33⅓ @ 33⅓&10 %

**Screw Drivers.**
Douglas Mfg Co....................................dis 20&10&10 %
Disston's...................................................dis 45 %
Disston's Patent Excelsior..................................dis 45 %
Buck Bros...................................................dis 30 %
Stanley R. & L. Co.'s Varnished Handles....dis 65&10 %
Stanley R. & L. Co.'s Black Handles..........dis 60&10 %
Sargent & Co.'s No. 1 Forged Blade............dis 70&10 %
Sargent & Co.'s No. 20.................................dis 66⅔&10 %
Sargent & Co.'s Nos. 40 & 30, Cast Steel.....dis 55&10 %
Sargent & Co.'s No. 60, Round Blade.............dis 60&10 %
Knapp & Cowles' No. 1 ....................dis 60&20 @ 70 %
Knapp & Cowles' No. 1 Extra..............dis 60 @ 60&10 %
Knapp & Cowles No. 00 & 4.......dis 50&5 @ 50&10 %
Sets interchangeable....................₩ doz $18.00, dis 25 %
Champion.....................................................dis 25 %
Clark's Patent...............................................dis 30 @ 33⅓ %
Crawford's Adjustable........................................dis 30 %
Ellrich's Socket and Ratchet......................dis 25 @ 25&10 %
Allard's Spiral, new list.......................................dis 25 %
Kolb's Common Sense..................₩ doz $6, dis 25&10 %
Syracuse Screw-Driver Bits.......................dis 30 & 30&5 %
Screw Driver Bits..............................₩ doz, 50¢ @ 75¢
Screw Driver Bits, Parr's ...................................₩ gro., 6.25
Fray's Hol. Hdle. Sets, No. 3, $12.....dis, 25 @ 25 & 10 %

**Screws.**
*Wood Screws*—List, February 15, 1886.
Flat Head Iron..........dis 75 %
Round Head Iron........dis 70 %
Flat Head Brass.........dis 75 %
Round Head Brass.......dis 70 %
Flat Head Bronze.......dis 75 %
Round Head Bronze......dis 70 %
} Extra 10 % often given.
*Machine—*
Flat Head, Iron.................................................dis 55 %
Round Head, Iron................................................dis 50 %
*Bench and Hand—*
Bench, Iron..................................dis 55&10 @ 55&10&10 %
Bench, Wood, Beech........................................₩ doz $2.25
Bench, Wood, Hickory....................................dis 20&10 %
Hand, Wood.........................dis 25&10 @ 25&10&5 %
Lag or Coach.....................................................dis 70 %
Coach, Patent Gimlet Point...................................dis 70&10 %
Bed................................................................dis 25&5 %
Hand Rail, Sargent's.............................................dis 66⅔&10 %
Hand Rail, Humason, Beckley & Co.'s..dis 70&10@75 %
Hand Rail, Am. Screw Co..........................................dis 75 %
Jack Screws, Millers Falls list....................dis 50 @ 50&5 %
Jack Screws, P. S. & W..........................................dis 35 %
Jack Screws, Sargent...............................dis 60&10 @ 60&10&5 %

**Scroll Saws.**
Lester, complete, $10.00........................................dis 25 %
Rogers, complete, $4.00..........................................dis 25 %

**Scythes.**
*Grain Scythes—*
Clipper, Full Polished, Boxed & Sharp....
German, Cast or Silver Steel, either Half Set or Waldron, in Straw..........
*Grass Scythes—*
Silver Clipper, Boxed and Sharp..........
German Steel, Half Set Waldron...........
Cast Steel and German Steel, Full Set or Waldron, Sharp and Boxed.................
Bush, Bramble and Weed......................
Clover............................................
Imperfect Grass and Bush....................
Imperfect Grain..................................
} Prices irregular.

**Scythe Snaths**.....................................dis 40&10@50 %

**Shears.**
American (Cast) Iron...........dis 75&10 @ 75&10&5 %
Pruning..........................See Pruning Hooks and Shears
Barnard's Lamp Trimmers.....................................₩ doz $3.75
Tinners'..................................................................dis 20&2 %
Seymour's, List, Dec., 1881.................................dis 60&10&5 %
Heinsch's, List, Dec., 1881......................................dis 60&10 %
Heinsch's Tailor's Shears..........................................dis 33⅓ %
First quality C. S. Trimmers..........................................dis 80 %
Second quality C. S. Trimmers.dis 80&10 @ 80&10&5 %
Acme Cast Shears.........................................................dis 10&10 %
Diamond Cast Shears........................................................dis 10 %
Clipper...........................................................................dis 10&10 %
Victor Cast Shears.............................................................dis 75&10 %
Howe Bros. & Hulbert, Solid Forged Steel.......dis 40 %
Cleveland Machine Co., Solid Steel Forged.......dis 70 %

**Sheaves.**
*Sliding Door—*
M. W. & Co., list Jan. 1, 1887.....................................dis 60&2 %
R. & E., list Dec. 18, 1885..........................................dis 60&2 %
Corbin's list..........................................................dis 60&10&2 %
Patent Roller..........................................................dis 60&10&2 %
Patent Roller, Hatfield's....................................................dis 70 %
Russell's Anti-Friction, list Dec. 18, 1885..dis 60&2 %
Moore's Anti-Friction.........................................................dis 60 %
*Sliding Shutter—*
R. & E. list Dec. 18, 1885.........................................dis 60&10&2 %
Sargent's list..............................................................dis 60&10 %
Reading list...........................................................dis 60&10&10 %

**Ship Tools.**
L. & I. J. White.......................................................dis 20&5 %
Albertson Mfg. Co.......................................................dis 25 %

**Shoes, Horse, Mule, &c.**
*Horse—*
Burden's, Perkins', Phœnix, at factory.........$4.00
*Mule*—Add $1 ₩ keg to above prices.
*Ox, Wrought—*
Ton lots............................................................₩ ℔ 9¢
1000 ℔ lots.......................................................₩ ℔ 9½¢
500 ℔ lots.........................................................₩ ℔ 10¢

**Shovels and Spades.**
Ames' Shovels, Spades, &c., list Nov. 1, 1885....dis 20 %
NOTE.—Jobbers frequently give 5 @ 7½ % extra on above.
Griffith's Black Iron..........................................dis 50&10 %
Griffith's C. S ..........................................dis 50&10@60 %
Griffith's Solid Cast Steel R. R. Goods.................dis 20 %
Old Colony.......................................dis 15 @ 15&10 %
St. Louis Shovel Co...................................................dis 20 %
Hussey, Binns & Co.............................................dis 20 @ 30 %
Hubbard & Co.....................................dis 20@20&7½ %
Lehigh Mfg. Co.................................................dis 50&10 %
Payne Pettebone & Son, list January, 1886....dis 30 %
Remington's (Lowman's Patent), .....dis 30&10 @ 40 %
Rowland's, Black Iron..........................................dis 50&10 %
Rowland's Steel. .... ... ...... ... dis 60 @ 60&10 %

**Shot.**
Drop, ₩ bag, 25 ℔ (2¢ off for cash in 5 days........$1.60
Drop, ₩ bag, 5 ℔.........................................................37¢

**Shovels and Tongs.**
Iron Head.....................................dis 60&10@60&10&5 %
Brass Head.............................................dis 60&10&10 %

**Skeins, Thimble.**
Western list.........................................dis 70&10@75 %
Columbus Wrt. Steel......................................dis 33⅓&5 %

**Sieves.**
Buffalo Metallic, S. S. & Co., new list.......dis 50&210 %
Barler Flour Sifters ...............................₩ doz $2.00

| | | |
|---|---|---|
| *Sieves, Wooden Rim—* | Iron. | Plated. |
| Mesh 18, Nested, ₩ doz | 70¢ | 90¢ |
| Mesh 20, Nested, ₩ doz | 85¢ | $1.00 |
| Mesh 24, Nested, ₩ doz | $1.00 | 1.10 |

**Slates.**—School, by case...........................dis 50 @ 50&5 %

**Snaps, Harness, &c.**
Anchor (T. & S. Mfg Co.).............................................dis 65 %
Fitch's (Bristol)..........................................................dis 65 %
Hotchkiss ...................................................................dis 10 %
Andrews ..................................................................dis 50 %
Sargent's Patent Guarded.......................................dis 70&10&10 %

German, old list...................................................dis 75 %
German, Sargent's 1886 list.................................dis 50&10 %
Covert...........................................................dis 50&2 %
Covert, New Patent..............................................dis 50&2 %
Covert New R. E.................................................dis 60@2 %
Covered Spring............................................dis 66⅔&10 %

**Soldering Irons.**
Covert's Adjustable, list Jan. 1, 1886........dis 35&2 %

**Spoke Shaves**—Iron...........................................dis 45 %
Wood.......................................................................dis 30 %
Bailey's (Stanley R. & L. Co.)...............................dis 40&10 %
Stearns'................................dis 30&10 @ 30&10&10 %

**Spoke Trimmers.**
Bonney's................................₩ doz $10.00, dis 50 %
Stearns'..................................₩ doz $9.00, dis 20&10 %
Ives'......No. 1, $15.00; No. 2, $12.00 ₩ doz, dis 55&10 %
Douglass'................................₩ doz $9.00, dis 20 %

**Spoons and Forks.**
*Tinned Iron—*
Basting, Central Stamping Co.'s list .. dis 33⅓&2 %
Solid Table and Tea, Central Stamping Company's list.........................................................dis 33⅓&2 %
Buffalo, S. S. & Co........................................dis 33⅓&2 %
*Silver-Plated—*
Meriden Brit. Co., Rogers ......dis 50&5 @ 50&10&5 %
Reed & Barton........................dis 50&5 @ 50&10&5 %
C. Rogers & Bros..........................50&5 @ 50&10&5 %
Rogers & Bro ...........................50&5 @ 50&10&5 %
Wm. Rogers Mfg. Co. ..................dis 50&10 @ 60 %
Simpson, Hall, Miller & Co........dis 50&10&5 @ 60 %
Holmes, Booth & Haydens ........dis 50&10&5 @ 60 %
Holmes & Edwards Silver Co ..........dis 50&10 @ 60 %
H. & E. Silver Co. Steel Silver-Plated Teas, $15; Tables, $30. .. ..........................dis 50 @ 50&10 %
German Silver............................................dis 50 @ 50&5 %
German Silver, Hall & Elton...................................dis 40&5 %
Britannia..............................dis 60&10 @ 60&10&10 %

**Springs.**
Elliptic, Concord, Platform and Half Scroll...... ..........................................dis 60&10 @ 60&10&10 %
Cliff's Bolster Springs ...........................................dis 25 %

**Squares.**
Steel and Iron..............} ...........dis 75&10 %
Nickel-Plated...............}
Try Square and T Bevels......dis 60&10 @ 60&10&10 %
Disston's Try Square and T Bevels.........................dis 45 %
Winterbottom's Try and Miter............................dis 30&10 %

**Staples.**
Fence Staples, Galvanized......................₩ ℔, 4¼ @ 4½¢
Fence Staples, Plain ..........................₩ ℔, 3¼ @ 3½¢

**Steelyards**..................................dis 40&10@50&5 %

**Stocks and Dies.**
Blacksmith's..............................................dis 40 @ 40&5 %
"Lightning" Screw Plate..................................dis 20 @ 25 %

**Stone.**
Hindostan No. 1, 3½¢; Axe, 4½¢; Slips, 5½¢.....
Sand Stone......................................................₩ ℔, 2½¢
Washita Stone, Extra............................₩ ℔, 21 @ 22¢
Washita Stone, No. 1.............................................₩ ℔, 17¢
Washita Stone, No. 2.............................................₩ ℔, 13¢
Washita Slips, No. 1, Extra..........................₩ ℔, 47 @ 48¢
Washita Slips, No. 1..................................₩ ℔, 37 @ 38¢
Arkansas Stone, No. 1, 4 to 6 in.................₩ ℔, $1.45@1.50
Arkansas Stone, No. 1, 6 to 9 in..............................₩ ℔, $1.75
Turkey Oil Stone...............................4 to 8 in., ₩ ℔, 60¢
Turkey Slips..................................................₩ ℔, $2.00
Lake Superior..................................................₩ ℔, 17¢
Lake Superior Slips.......................................₩ ℔, 31@32¢

**Stove Polish.**
Joseph Dixon's........................₩ gro $6.00, dis 10 %
Gem.........................................₩ gro $4.50, dis 10 %
Gold Medal..............................₩ gro $6.00, dis 25 %
"Mirror"...................................₩ gro $6.00, dis — %
Lustro.............................................₩ gro $4.75 net
Ruby...............................................₩ gro $3.75 net
Rising Sun, 5 gro. lots........................................₩ gro $5.50
Dixon's Plumbago..................................................₩ ℔ 8¢ net
Boynton's Noon Day, ₩ gro .......................................$5.00
Parlor Pride Stove Enamel.....................................₩ gross, $13

| | | | | |
|---|---|---|---|---|
| Yates' Liquid, | 2 | 3 | 5 | 10 gal. cans |
| ₩ gal... | $0.90 | .80 | .70 | .60 |

Yates Standard Paste Polish, 10-lb cans, per lb., 15 ¢
Jet Black...................................................₩ gro $3.50
Japanese.....................................................₩ gro $3.50
Fireside.....................................................₩ gro $2.50

**Tacks, Brads, &c.**
List, Sept. 1, 1882, and supplement, Jan. 1, 1886;
American Iron Tacks, Carpet ..............................dis 75 %
Steel Carpet Tacks...................................................dis 75 %
Swedes Iron Carpet Tacks..........................................dis 75 %
Swedes Iron Wire Carpet Tacks ..........................dis 70&10 %
Swedes Iron Tacks ...............................dis 70&5 @ 70&10 %
Swedes Iron Upholsterers' Tacks..................................dis 70 %
Tinned Swedes Iron Tacks............................................dis 70 %
Tinned Swedes Iron Upholsterers' Tacks......................dis 70 %
Gimp and Lace Tacks ..........................dis 60&10&10 @ 70 %
Tinned Gimp and Lace Tacks......dis 60&10&10 @ 70 %
American Iron Cut Tacks..........................dis 70&5@70&10 %
Copper Tacks........................................dis 60 @ 60&5 %
Copper Finishing and Trunk Nails.........dis 60 @ 60&5 %
Cigar Box Nails.......................................................dis 55 %
Finishing Nails.......................................................dis 55 %
Hungarian Nails and Miners' Tacks...............................dis 60 %
Trunk and Clout Nails...............................................dis 60 %
Tinned Trunk and Clout Nails....................................dis 60 %
Basket Nails............................................................dis 60 %
Chair Nails..............................................................dis 60 %
Common and Patent Brads...........................................dis 60 %
Tinned Capped Trunk Nails ...................................dis 40&7½ %
Looking-Glass Tacks...............................................dis 40&7½ %
Picture-Frame Points...............................................dis 40&7½ %
Leathered Carpet Tacks...........................................dis 40&7½ %
Brush Tacks..........................................................dis 40&7½ %
Shoe Finders'.....................List June 1, 1886, dis 10&10 %
Lining and Saddle Nails, List Jan. 1, 1886:
Silvered ....................................................dis 30&10&10 %
Japanned.................................................dis 20&10&10 %
*Walkley Hardware Co.'s Steel Carpet Tacks:*
Diamond Brand........................₩ doz 12¢; tinned, 16¢
Circle Brand..............................₩ doz 24¢; tinned, 32¢
Horse Shoe Brand.....uniform wts., 12¢; tinned, 16¢
Horse Shoe Brand, double unif'm wts., 22¢; tin'd, 30¢
In 5-case lots.......................................................dis 10 %
Double-pointed Tacks...............................dis 80 @ 80&10 %
Wire Carpet Nails ..................................dis 50 @ 50&10 %
Steel Wire Brads, R. & E. Mfg. Co..........dis 50 @ 50&10 %

**Tap Borers.**
Common and Ring .......................................dis 20&10 %
Ives' Tap Borers.........................Nos. 1, 2, 4—dis 15&10 %
Ives' Tap Borers.........................Nos. 13, 14—dis 25&10 %
Enterprise Mfg. Co...........................................dis 20&10 %
Clark's.....................................................dis 33⅓ @ 35 %

**Tapes, Measuring.**—American...............dis 25&10 %
Spring............................................................dis 40 %
Chesterman's..........................Regular list dis 25 @ 30 %

**Thermometers.**—Tin Case.........dis 80 @ 80&10 %

**Thimble Skeins.**—See Skeins.

**Ties, Bale.**
Steel Wire, Standard list ..................................dis 50&10 %

**Tinners' Shears, &c.**
Shears and Snips (P. S. & W.).. ...................dis 20 @ 25 %
Punches—See Punches.
Snips, J. Mallinson & Co ......................................dis 33⅓ %

**Tinware**
Stamped, Japanned & Pieced, Central Stamping Co.. list June 1, 1886......dis 25&2 @ — %
Pieced, Sidney Shepard & Co..........dis 33⅓ %
Japanned, Sidney Shepard & Co......dis 33⅓ %
Stamped, Sidney Shepard & Co......dis 33⅓ %
} Extras sometimes given.

**Tobacco Cutters.**
Enterprise Mfg. Co. (Champion).... ...dis 20&10 @ 30 %
Wood Bottom .........................₩ doz $5.00 @ $5.25
All Iron ................................................₩ doz $4.25
Nashua Lock Co.'s.... .......₩ doz $18.00, dis 50 @ 55 %
Wilson's....................................................dis 55 %
Clipper (Sargent & Co.).......₩ doz $24, dis 50&10&10 %
Acme..................................₩ doz $20.00, dis 40 %

**Transom Lifters.**
Wollensak's Patent Iron Bronzed..........................dis 50 %
Reiher's Improved Self-Locking (Class 301)....dis 45 %
Reiher's Improved Set Screw (Class 201)..........dis 55 %
Reiher's (Class 101)..............................................dis 65 %
Excelsior...................................................dis 50&1 &2 %
Shaw's..........................................................dis 45&10 %
Payson's Universal............................................dis 40 %
Crown and Star..................................................dis 50 %

**Traps.**
*Game—*
Newhouse ...........................................dis 35 @ 40 %
Oneida Pattern...........................dis 60&10&10 @ 70 %
Game, Blake's Patent.................................dis 40&10&5 %
*Mouse and Rat—*
Mouse, Wood, Choker........................₩ doz holes, 15¢
Mouse, Round Wire...........................₩ doz $1.50, dis 10 %
Mouse, Cage, Wire.............................₩ doz $2.50, dis 10 %
Mouse, Catch-'em-alive.......................₩ doz $2.50, dis 15 %
Mouse, "Bonanza" ...................................₩ gross $10 net
Mouse, Delusion.................................₩ gross $18.00, dis 5 %
Rat, "Decoy"......................................₩ gross $10.00, dis 10 %
Ideal.......................................................₩ gross $10
Cyclone ..................................................₩ gross $6.25

**Trowels.**
Lothrop's Brick and Plastering..............dis 30 @ 30&5 %
Reed's Brick and Plastering....................................dis 15 %
Disston's Brick and Plastering.................................dis 25 %
Peace's Plastering...................................................dis 25 %
Clement & Maynard's................................................dis 20 %
Rose's Brick....................................................dis 15 @ 20 %
Brade's Brick..........................................................dis 25 %
Worrall's Brick and Plastering...................................dis 20 %
Garden....................................................................dis 20 %

**Triers.**
Butter and Cheese.....................................................dis 25 %

**Trucks, Warehouse, &c.**
Penfield Block Co.'s list, 1882......................................dis 40 %

**Tubes, Boiler.**—See Pipe.

**Twine.**

| | | | | |
|---|---|---|---|---|
| | | | BC. | B. |
| No. 9, Flax Twine, | ¼ and ½ ℔ Balls | | 22¢ | 30¢ |
| No. 12, " " | ¼ and ½ | " | 20½¢ | 28¢ |
| No. 18, " " | ¼ and ½ | " | 18½¢ | 28¢ |
| No. 24, " " | ¼ and ½ | " | 18½¢ | 27¢ |
| No. 36, " " | ¼ and ½ | " | 17¢ | 26¢ |
| No. 264, Mattrass, | ¼ and ½ | | | 45¢ |

Chalk Line, Cotton, ½ ℔ Balls....................................25¢
Mason Line, Linen, ½ " .......................................55¢
2-Ply Hemp, ¼ and ½ ℔ Balls (Spring Twine)........12¢
3-Ply Hemp, 1 ℔ Balls..............................................12½¢
3-Ply Hemp, 1½ ℔ Balls...........................................11½¢
Cotton Wrapping, 5 Balls to ℔.............................14¢ @ 15¢
2, 3, 4 and 5 Ply Jute, ½ ℔ Balls ..............................9½¢
Wool....................................................................5½¢ @ 6¢
Paper......................................................................13¢ @ 14¢
Cotton Mops—6, 9, 12 and 15 ℔ to doz...........................17¢

**Vises.**
Solid Box.. ..........................................dis 50&10&5 %
*Parallel—*
Fisher & Norris Double Screw.................dis 15&10 %
Stephens'..................................................dis 25 %
Parker's.....................................................dis 20 @ 25 %
Wilson's.....................................................dis 55 %
Howard's....................................................dis 40 %
Bonney's....................................................dis 40 %
Millers Falls.....................................dis 40 @ 40&10 %
Trenton.................................dis 40&5 @ 40&10 %
Merrill's......................................................dis 15@20 %
Sargent's.............................................dis 60&10&10 %
Backus and Union.....................................................dis 40
Double Screw Leg........................................dis 15&10 %
Prentiss....................................................dis 20&5 @ 25 %
Simpson's Adjustable.....................................................dis 40 %
*Saw Filers—*
Bonney's, Nos. 2 & 3........................₩ doz $15.00, dis 40 %
Stearn's..................................................................dis 40 %
Sargent's...............................................dis 60&10&10 %
Hopkins'.........................................₩ doz $17.50, dis 10 %
Reading...............................................................dis 37½&10 %
Wentworth............................................................dis 20&10 %
Combination Hand Vise.................................₩ gro, $12.00
Cowell Hand Vises.......................................................dis 55 %
Bauer's Pipe Vises.......................................................dis 10 %
Amateur Vise .......................................................₩ gro $18.00

**Wagon Boxes.**
Per lb........................................................................3½¢

**Washer Cutters.**
Smith's Patent.................₩ doz $12.00, dis 20&10&10 %
Johnson's.................................₩ doz $11.00, dis 33⅓ %
Penny's....................₩ doz Pol. $14; Jap'd, $16, dis 55 %
Appleton's.................................₩ doz $16.00, dis 60&10 %
Bonney's........................................................dis 30&10 %

**Washers.**—See Nuts and Washers.

**Wedges.**—Iron.......................................................₩ ℔ 3½¢
Steel...........................................................................₩ ℔ 4 ¢

**Well Buckets, Galvanized.**
Hill's..................₩ doz ..12 qt., $3.50; 14 qt., $4.50
Iron Clad ................₩ doz., 14 qt., $8, dis 40 @ 40&5 %
Whiting's Flat Iron Band.........................................₩ doz $4.25
Whiting's Wired Top ...............................................₩ doz $4.00

**Well Wheels**—8 in., $1.75; 10 in., $2.05; 12 in., $2.75

**Wire.**
*Iron—*
Market, Br't & Ann'ld, Nos. 0 to 18...............dis 72½ %
Market, Coppered, Nos. 0 to 18.................................dis 65 %
Market, Galvanized, Nos. 0 to 18 .......................dis 60&5 %
Market, Tinned, Tinned list Nos. 0 to 18...dis 60&5 %
Stone Bright and Annealed, Nos. 16 to 18, dis 65&5 %
Stone, Bright and Annealed, Nos. 19 to 26, dis 65&10 %
Stone, Bright and Ann'd, Nos. 27 to 36....dis 72½&5 %
Stone, Galvanized, Nos. 19 to 30...........................dis 55&5 %
Stone, Tinned, Tinned list, Nos. 18 to 36....dis 60&5 %
Tinned Broom Wire, Nos. 18 to 24 ......................dis 60&5 %
Annealed Fence, Nos. 8 & 9..................................dis 65&5 %
Annealed Grape, Nos. 10 to 14..............................dis 65&5 %
Brass and Copper, list, Jan. 18, '84............dis 25 @ 25&5 %
Barb Fence..........................................................See Trade Report
Wire on Spools.........................................................dis 65 %
Malin's Spld. Wire, 1 ℔, ½ ℔ & ¼ ℔ sp'ls.........40&10&5 %
Cast Steel Wire.........................................................dis 50 %
Stubs' Steel Wire.................................$6.00 to £, dis 30 %
Steel Music Wire, Nos. 12 to 30..........................................55¢ ₩ ℔
Picture Wire.........................................................dis 60&10 %
Barb Wire Safety Guards...............₩ 1000 $9.00, dis 25 %
Wire Clothes Lines. See Lines.

**Wire Cloth,** green, drab and black, ₩ 100 sq. ft No. 34 Wire $1.90; No. 33 Wire, $2.00

**Wire Goods.**—See Bright Wire Goods.

**Wire Rope**.—List May 1, 1886..........................dis 33⅓ %

**Wrenches.**—American Adjustable...........................dis 45 %
Baxter's Adjustable "S".......................................dis 35&10 %
Baxter's Diagonal.........................................dis 40 @ 40&10 %
Coes' Genuine.................................................................dis 55&3 %
Coes' "Mechanics'"......................................................dis 55&10&3 %
Coes' Pattern, Malleable..................dis 80&10 @ 80&10&5 %
Coes' Pattern, Wrought.......................dis 80&10@80&10&5 %
Girard Standard............................................................dis 70&10 %
Girard Agricultural.........................dis 80&10 @ 80&10&5 %
Lamson & Sessions' Engineers'.............................dis 60&10 %
Lamson & Sessions' Standard ................................dis 70&10 %
Lamson & Sessions' Agricultural. dis 80&10@80&10&5 %
Sterling Wrench, Wrought.......dis 80&10@80&10&5 %
Bemis & Call's Patent Combination.............................dis 30&5 %
Bemis & Call's Merrick's Pattern.....................................dis 35 %
Bemis & Call's Brigg's Pattern...........................................dis 25 %
Bemis & Call's Cylinder or Gas Pipe ...........................dis 40&5
Bemis & Call's No. 3 Pipe.................................................dis 35&5
Aiken's Pocket (Bright)...................................$6.00, dis 50&10 %
The Favorite Pocket (Bright).........₩ doz $4.00, dis 40 %
Webster's Patent Combination.........................................dis 25 %
Boardman's.....................................................dis 25@25&10 %
Always Ready.........................................................dis 25&5
Alligator...................................................................dis 50 %
Donohue's Engineer.......................................................dis 25 %
Acme, Bright....................................................dis 60&3 @ 60&10 %
Acme, Nickeled...............................................................dis 45 %
Acme, Bicycle, 4½ in.......................................................dis 45 %
Walker's.......................................................................dis 55&3
Diamond.......................................................................dis 40 %
Diamond Patent Steel.....................................................dis 40 %

**Wrought Goods.**
Staples Hooks, &c., list Jan. 12, 1887.......dis 80&10 %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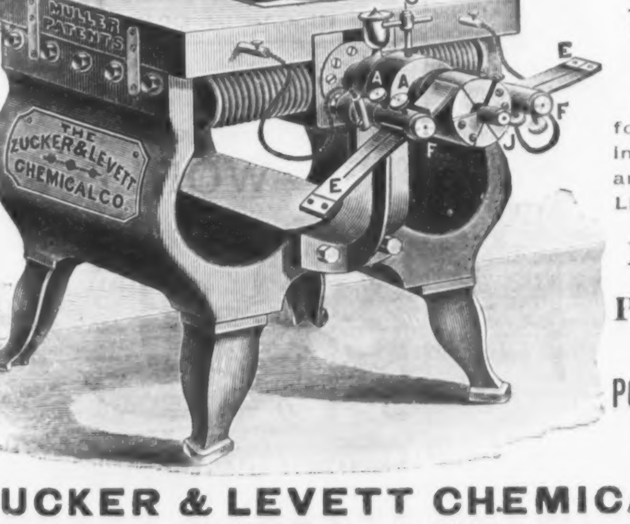


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## Coal Market.

The Coal trade is active, so far as circumstances permit, as advices received at the down-town agencies in this city indicate work is in progress at nearly all the shipping ports and that considerable Coal is moving. The Delaware and Hudson Canal Company have 75 men at Weehawken, and claim to be handling more than the average daily quantity, sufficient to supply all their customers, with prices unchanged. Shipments from other points are said to be increasing daily, but, as supplies are mainly absorbed by the large contractors, manufacturers, the elevated railroads, &c., retail dealers experience little relief. The main difficulty is landing Coal on the piers. At South Amboy, where the large Bituminous yards are situated, the state of affairs is extraordinary, as the men are receiving the largest wages paid in the trade, ranging from $20 to $28 per week, and at a meeting held on Tuesday night stated that they had no grievance; that if they yielded to the demands of the Knights it would in effect be a strike for less wages than they were already receiving. Without awaiting their decision the Berwind White Company decided to permit no delay in their shipments, at the same time making arrangements for adequate protection. They propose to put their coal alongside the steamers, which comprise most of the regular liners, which absolves them from further responsibility. Despite these efforts manufacturers at various points, refiners of oil and sugar, &c., state that unless impediments are removed they will have no alternative but closing their works, perhaps within a week.

The following is the statement of the Anthracite Coal Tonnage for the past year: Philadelphia and Reading, 11,690,483 tons; Lehigh Valley, 6,184,455 tons; Delaware, Lackawanna and Western, 5,172,022 tons; Delaware and Hudson, 3,480,681 tons; Pennsylvania Railroad, 3,478,884 tons; Pennsylvania Coal Company, 1,398,179 tons; New York, Lake Erie and Western, 731,649 tons; total tonnage for the year, 32,135,362 tons, an increase of 512,832 tons over 1885. The stock of Coal on hand at tidewater shipping points on December 31, 1886, was 372,282 tons, as compared with 754,545 tons December 31, 1885. At the close of last year the total stock of Anthracite at all tidewater shipping points was only 372,282 tons, while on December 31, 1885, the accumulated stock at tide was 754,545 tons. The total amount of Anthracite Coal sent to market for the week was 552,256 tons, compared with 501,262 tons in the corresponding week last year. The total amount of Anthracite mined thus far in the year 1887 is 991,053 tons, compared with 931,993 tons for the same period last year, an increase of 59,060 tons. The shipments from the mines of the Cumberland Coal region for the week were 45,632 tons, and for the year to date 100,368 tons. The following figures are the percentages which the several districts in the Bituminous regions agreed to accept at the last meeting: Clearfield, 32¾ %; Cumberland and Elk Garden, 32¾ %; Pocahontas, 10½ %; Chesapeake and Ohio, 10½ %; Beech Creek, 10½ %, and Erie, 3 %.

The gigantic Coal breaker of the Parish Coal Company, at Plymouth, Pa., was burnt on Tuesday night with all its costly machinery. The loss is estimated at $100,000.

---

At Chicago, on Monday, the Linden Steel Company, of Pittsburgh, entered up judgment by confession in the Circuit Court for $20,898 against the Chicago Tire and Spring Manufacturing Works, and immediately filed a creditor's bill in the Supreme Court for appointment of a receiver. On application to Judge Shepard, J. J. McCarthy was appointed receiver. Mr. Ferry, the treasurer, paid the judgment. An order was at once entered discharging the receiver, who had not even had time to file his bond.

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A suit has been begun at Menominee by Rev. J. E. Banfield involving the title to the famous Chapin Mine.

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The Chapin process is being introduced at Bethlehem.

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Although the production of lead pipe has commonly been regarded of quite modern origin there appears to be evidence that the Romans were acquainted with the article, without, however, possessing the appliances for fabricating anything of large dimensions or sufficiently strong to withstand pressure from the fountain head. In the Cherchel Museum is a piece of lead piping made by rolling a sheet of metal, turning the edges over and then running molten lead along the joints.

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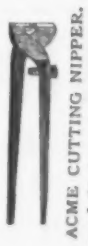

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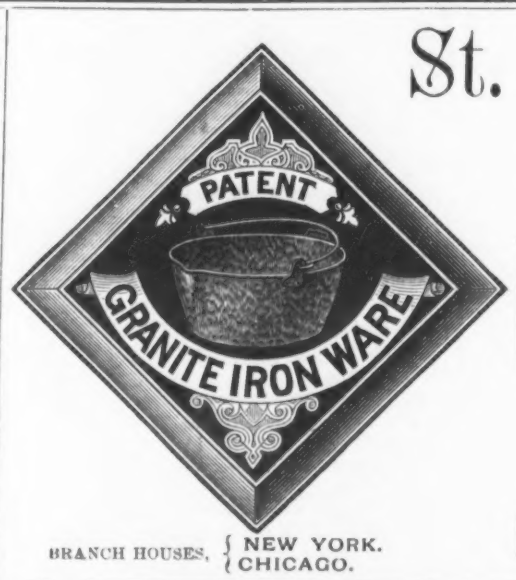


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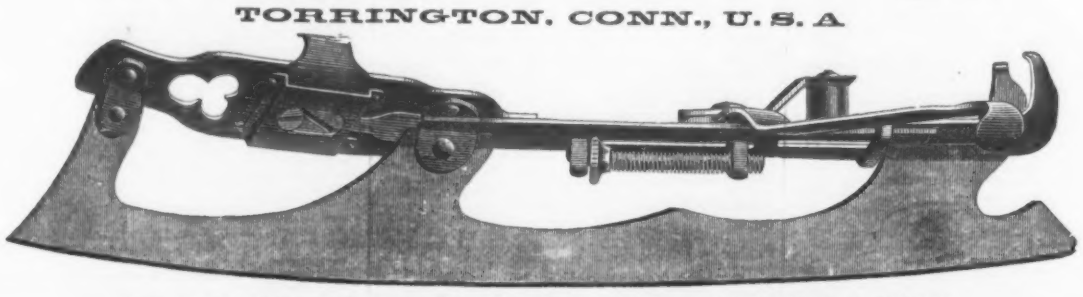

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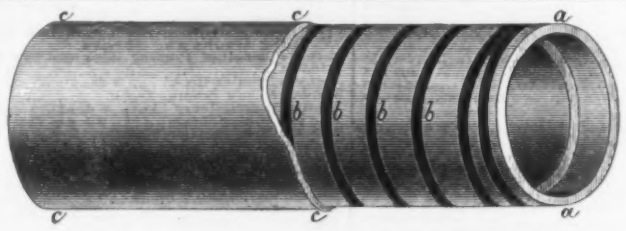


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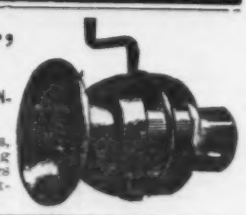

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# MECHANICAL.

### The Lappin Brake Shoe.

We take pleasure in presenting on this page engravings of a new form of brake shoe brought out by the Lappin Brake Shoe Company, 239 Broadway, New York.

The shoe, it will be noticed, is cast in one piece, having its wheel-engaging surface composed of alternating chilled and soft sections, integral with the body of the shoe. The soft portions project on the face of the shoe about ¼ inch, as shown in Figs. 1 and 3. The soft projections are for safety in the first place; next, to take the shape of the tread of the wheel readily. When the soft projections are worn to the level of the chills, the soft parts give the necessary friction and the chilled portions give the wear; the soft sections not wearing away any faster than allowed by the chills. The shoe has no cutting-edge whatever, as the chilled portions pass into the body of the shoe, as shown in the cuts, and mingle with the soft metal. Any desired amount of friction can be given by placing the chills closer together or further apart, thus entirely obviating skidding, or at least reducing the chances to a minimum. The fact that a wheel, even if furnished with the softest steel tire, cannot be cut by the shoe, is of importance and will be appreciated.

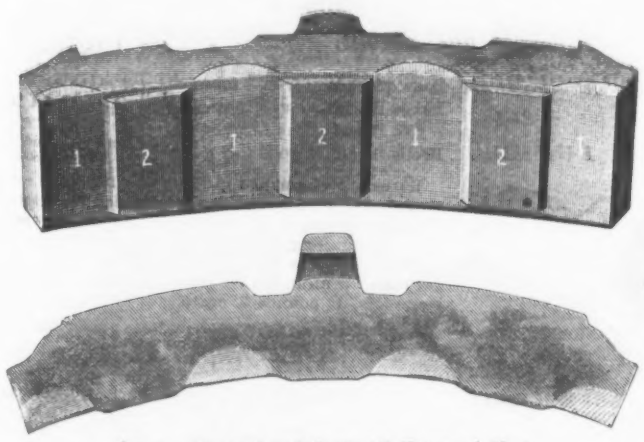


*Fig. 1.—General and Sectional Views of Shoe.*

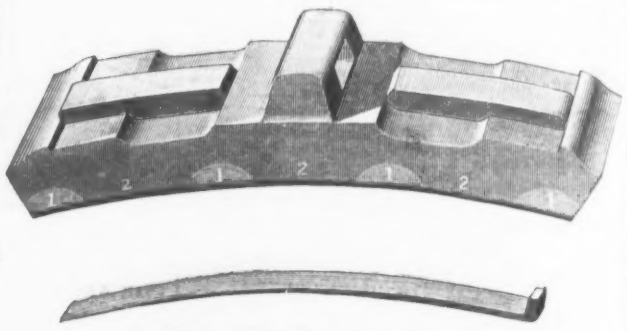


*Fig. 3.—View of Back of Shoe.*

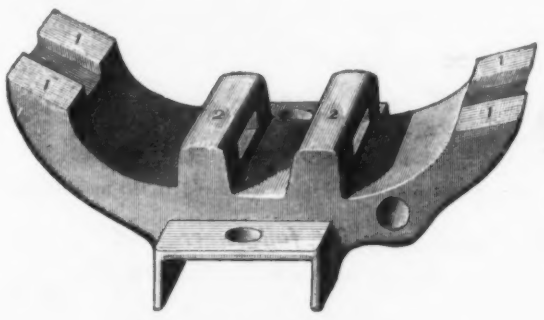


*Fig. 2.—Improved Christie Brake Head.*

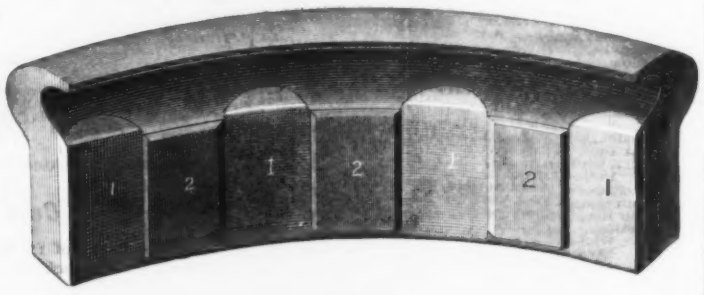


*Fig. 4.—Flanged Shoe.*

THE LAPPIN BRAKE SHOE, MADE BY THE LAPPIN BRAKE SHOE COMPANY, NEW YORK.

Fig. 2 represents the improved Christie brake-head, four points of the head being cast on a stationary chill. This case hardens the bearings and gives them much greater endurance than would ordinarily be the case. An improvement is also made on the back of the shoe, a projection being cast on (Fig. 3), which fits into the recesses between the bearing points, preventing lateral motion, and also acts as a bearing for the whole length of the key and prevents its turning. The shoe is reversible, and is put on from the side. Fig. 4 shows a flanged shoe similar in principle to that which we have just described.

The shoe and improved Christie head, it is claimed, are so constructed relatively to each other that, while exceedingly simple and effective, they also possess much greater strength and durability compared with those commonly in use. The shoe and head can be quickly and strongly united or quickly disengaged as desired, economizing labor in either case by the ease and rapidity of adjustment or removal, and by reason of the close and secure union of the parts, owing to their peculiar construction, avoiding looseness and rattle and all unnecessary strain. All the corresponding parts of the shoe and head are thoroughly interchangeable

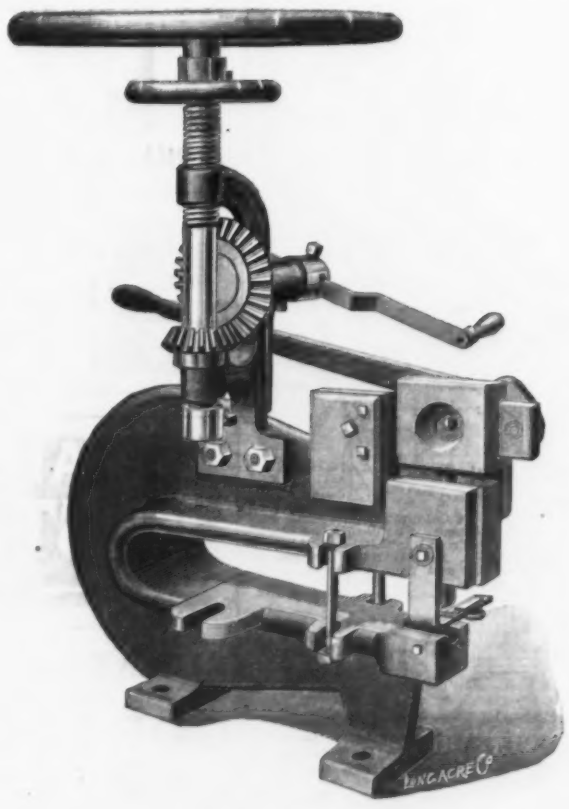
It is of interest to note here that the Lappin Brake Shoe Company is now making extensive additions to their plants by the erection of a foundry at Bloomfield, N. J., with facilities for turning out 25 tons of castings per day. It is their intention to supplement these works by others at various large centers where business will be best subserved. The Lappin shoe, we may further add, is being used by the Manhattan Elevated Railroad Company of New York. On this road upward of 60,000 stops are made per day, giving the shoe a most severe test.

### The Fastest Torpedo Boat.

Under the above head English papers have recently referred to the latest torpedo boat turned out from the yard of Messrs. Yarrow & Co. It is claimed to be not only the fastest vessel in the British Navy, but the quickest maneuvering craft. This vessel, which will be historically known as No. 79, is 135 feet long by 13 feet beam, and one of her special features is that she is fitted with triple expansion engines of the inverted cylinder type, and making 400 revolutions per minute when running at full speed. The boiler is of the ordinary torpedo boat type, constructed for a working pressure of 240 pounds per square inch. The coal bunkers are capable of carrying sufficient coal for steaming 1800 miles at 11 knots per hour. She is fitted with two turrets, from either of which she can be steered. Working round each turret are two torpedo guns for firing over the sides of the vessel, and there is also one torpedo gun forward for firing direct ahead. At the recently completed official trial the speed attained during a two hours' continuous run was 22.4 knots per hour at 400 revolutions and 140 pounds boiler pressure, and when going ahead the boat is capable of being turned in a circle, the mean radius of which is about equal to her length. In her latest runs No. 79 fully sustained the reputation she earned on her official trials, establishing her speed at 22.4 knots ahead and 18 knots astern, the mean time occupied in turning the circle being under one minute. Her rapid maneuvering power is due to her improved construction abaft, Messrs. Yarrow having cut her deadwood away to some extent, and fitted her with a specially shaped rudder approaching the balanced type. This removal of dead wood is not new with Messrs. Yarrow, who adopted the same principle in two Chilian torpedo boats in 1880, and which played an important part in the blockade of Callao. When these boats were built speed was everything, and steering power was not then thought so much of, but now both are demanded. In No. 79 both speed and maneuvering power are present in an eminent degree.

### The Diamond State Punch.

A. L. Henderer, of Wilmington, Del., is putting on the market a new tool known as the Diamond State Punch. It is specially designed to punch light sheet metal to the centers of wide sheets. It will easily punch No. 10 iron, ¼ inch hole to the center of a 30 inch sheet or larger holes in thinner metal that distance from center. By using the stay bolts, as shown in the engraving which we annex, it will punch as large as ¼-inch hole through ¼ inch thickness of iron or its equivalent in thinner metal, 3¾ inches from edge of sheet. The punch and die are instantly adjusted by first passing the punch up through the die seat and then in the punch socket, and then dropping the die into its seat, the alignment of the holes being so accurate that there is no possibility of careless or incompetent workmen getting them out of line, causing the breaking or mutilating of the punch and die.



DIAMOND STATE PUNCH, BUILT BY A. L. HENDERER, WILMINGTON, DEL.

The punch, where desired, has a drill attached, which is as efficient as many more costly hand drills, and also shearing and wire-cutting attachments. The shear is for band iron $\frac{3}{16}$ thick and 2 inches wide or by reversing, 4 inches wide. The wire cutter will cut iron wire ¼-inch diameter. The punch can be furnished singly or with any or all of the attachments. It is well fitted, and the construction of its working parts such as to insure long service with the least possible chance of derangement or breakage. Each machine is furnished with three punches and dies any size under ½ inch. The weight of the punch is 140 pounds, and with drill attached, 175 pounds.

### The Friction of Slide Valves.

Referring to our recent remarks on friction tests for slide valves on the Chicago, Burlington and Quincy Road, the annexed particulars and engraving, for which we are indebted to the *Railroad Gazette*, will prove interesting:

The method by which the amount of friction was ascertained is simple and ingenious, and leaves little room for error. The valve stem or rod is removed, and in its place two rods are used. One rod is coupled to the valve, and the other to the rocker arm. The two rods are coupled by means of a cylinder filled with water. One rod is coupled to a piston with double cup-leathers working in this cylinder, and the other rod is coupled to the cylinder itself. The accompanying diagram shows the principle of the device, but is not drawn to scale or accurate in details. When the rocker arm moves, movement can only be transmitted through the water, which, being closely confined and incompressible, transmits to the piston the pressure necessary to move the valve. An indicator being placed on the cylinder registers the pressure, drawing a diagram in the same manner as if applied to an ordinary steam engine. The motion of the piston of the indicator of course causes a slight amount of lost motion, but as the cubic contents of the indicator cylinder are very small in proportion to the contents of the hydraulic cylinder, the lost motion is very minute and cannot much affect the total movement of the valve.

It was found that the average power taken to move an ordinary slide valve was 990 pounds, and that only 300 pounds was necessary to move a balanced valve of the pattern now used on the Chicago, Burlington and Quincy. In an ordinary passenger engine, when working in a notch giving 4½ inches travel to the valves, the tractive force necessary to overcome the resistance due to the valves would be about 82 pounds, or rather over 1 pound per ton weight of engine and tender The friction of balanced valves would be overcome by a tractive force of 25 pounds, or about ⅓ pound per ton weight of engine and tender. These amounts are much smaller than have been usually supposed, and show that the friction of the valves in good order is not an all-important factor in the frictional resistance of a locomotive engine. D. K. Clark reckoned that the total resistance of the engine and tender was 12 pounds per gross ton of their combined weight, but there is reason to think that this figure is somewhat too high for modern well constructed passenger engines in good order. Doubtless the total amount of friction varies in different types of engines, and is probably greatest in engines with several pairs of coupled wheels of small diameter. Clark's formulæ for the resistances of engines and trains were based on experiments made between 30 and 40 years ago on rolling stock and permanent, they differing widely from any now in use. The use of steel rails, better lubricants, larger wheels and journals and more accurate turning and fitting of the moving parts, have done much to reduce friction, and it is much to be regretted that some careful experiments are not made with modern rolling stock in order to settle authoritatively the laws which govern the resistance of trains.

# Imports.

**The following were the Imports of Hardware, Iron, Steel and Metals into the Port of New York for the week ending January 26, 1887:**

***Hardware.***

Alexandre, F. & Sons, Firearms, boxes, 2
Allen & Ginter, Mach'y, cs., 4
Boker, Hermann & Co. Mdse., cs., 20
Cowan & Co. Cases, 3
Dolge, Alfred, Mdse., cs., 9
Downing R. F. & Co. Case, 1
Field, Alfred & Co. Mdse., cs., 18 Anvils, 15 Bedsteads, bdls., 45
Gerdan, Otto, Bundles, 200
Henderson, P. & Co. Packages, 2
Hoe, R. & Co. Mdse., cs., 3
Junge, H. Cases, 5
Kastor, A. Mdse., cs., 12
Lewis & Conger, Cases, 2
McCoy & Sanders, Mdse., cs., 2
McCullough, J. M. & Son, Cases, 3
Newton & Shipman, Files, cks. 3
Perez Triana & Co. Mach'y, box, 1
Schutte, W. & Co. Mdse., cs., 20
Singer Mfg. Co. Mach'y, cs., 34
Thurnauer, G. M. Cases, 6
Vom Cleff & Co. Mdse., cs., 34
Wiebusch & Hilger, Mdse., cs., 16 Chains, cks., 25
Wilson, J. W. & Co. Mach'y, lot, 1
Witte, John G. & Bro. Cutlery, cs., 5
Wood E. Mach'y, cs , 2
Order, Chains, cks., 10 Packages, 6 Mach'y, pkgs., 34 Machines, pkgs., 15

***Iron.***

Abbott, Jere & Co. Spiegel, tons, 550
Baring Bros. & Co. Rivet wire rods, coils, 1062 Rolled iron, bdls., 364 Bundles, 156 Bars, 6052 Coils, 2662 Wire rods, coils, 1219 Nail rods, coils, 267 Rods, pkgs., 10,795
Crocker Bros. Pig, tons, 300 Ferromanganese, cks., 70
Greeley, E. S. & Co. Galv. wire, coils, 43
Lazard Freres, Rods, coils, 12,764
Henderson Bros. Pig, tons, 100
Lundberg, Gust. Rivet wire rods, coils, 835
Moore Bros. Tons, 130
Naylor & Co. Rods, bdls., 1348 Rods, coils, 8996
Stetson, Geo. W. & Co. Pig, tons, 100
Williamson, J., & Son, Pig, tons, 300
Windmuller, L., & Roeiker, Ironwork, cs., 5
Wright & Co. crank shaft, 1
Order, Pig, tons, 100 Flat bars, 85 Blooms, 300 Old rails, loads, 102 Old, pcs., 3172 Old rails, 2897 Old flange rails, 1863 Wire rods, coils, 15,408 Wire rods, bdls., 898 Girders, 24 Rods, bdls., 2745 Fish plates, 83,546 Old rails, tons, 312 Wrought pipes, 30 Spiegel, cks., 352

***Steel.***

Abbott, Jere. & Co. Wire, coils, 6247
Belcher & Parks, Bundles, 44 Casks, 3 Bars, 4
Downing, R. F. Slabs, 108 Plates, 61
Faville, J. M. Wire rods, bdls., 6321
Heyn, Alf. Bessemer rods, bdls., 6347 Rods, bdls., 423
Naylor & Co. Rods, bdls., 2517 Billets, 10,444 Blooms, 3418
Newton & Shipman, Bundles, 49 Bars, 85
Sheldon, G. W. & Co. Plates, 46
Wagner, W. F. Bundles, 288 Bars, 32 Plates, 14 Case, 1
Order, Railway leaf spring, lot, 1 Rods, pkgs., 10,839 Rails, 3937 Steel barrel hoops, bdls., 8400 Billets, 108 Wire draw. plates, cs., 3 Bundles, 10 Slabs, 102

***Metals.***

Am. Meter Co. Tin plates, bxs., 5
Baker, H. J. & Bros. Plumbago, bbls., 127
Carter & Hawley, Tin, slabs, 609
Cooper, Chas. & Co. Nickel oxide, cs., 18
Phelps, Dodge & Co. Reg. antimony, cks., 35
Reid, John, Wash tubs, &c., pkgs., 200
Schoonmaker, A. O. Mica, cs., 13
Thurnauer, G. M. Lanterns, cks., 7
Order, Plumbago, bbls., 1397 Quicksilver, bottles, 400 Tin, slabs, 3949 Tin ingots, 1485 Copper, ck., 1

The imports at this port of Cutlery, Hardware and Metals during the week ending January 21 were as follows:

| | Quantity. | Value. |
|---|---|---|
| Anvils | 20 | $262 |
| Brass goods | 61 | 3,005 |
| Chains and anchors | 33 | 1,369 |
| Copper | ... | 119 |
| Clocks | 19 | 1,658 |
| Copper ore | ... | 8,771 |
| Cutlery | 131 | 27,595 |
| Dutch metal | 6 | 1,464 |
| Guns | 56 | 6,206 |
| Hardware | 6 | 318 |
| Iron, pig, tons | 905 | 10,903 |
| Iron, sheet, tons | 51 | 2,940 |
| Iron, spiegel, tons | 1,361 | 31,863 |
| Iron, other, tons | 4,052 | 62,936 |
| Machinery | 74 | 6,398 |
| Metal goods | 476 | 32,935 |
| Nails | 7 | 719 |
| Needles | 15 | 2,842 |
| Nickel | 14 | 3,684 |
| Old metal | .. | 09 |
| Platina | 2 | 4,340 |
| Quicksilver | 100 | 3,328 |
| Regulus antimony | 34 | 1,371 |
| Saddlery | 7 | 1,222 |
| Steel | 54,653 | 94,808 |
| Tin, bxs. | 56,042 | 200,249 |
| Tin, slabs, 300 | 11,000 | 2,530 |
| Wire | 12 | 937 |
| Zinc, ℔ | 5,548 | 243 |
| Zinc, oxide | 50 | 486 |

The arrangements for the Scranton meeting of the American Institute of Mining Engineers are actively in progress. We understand that after the introductory session on Tuesday, February 15, there will be a reception, for which the citizens of Scranton are making elaborate preparations.

# Exports.

The following table presents the exports of Hardware, Iron, Steel, Metals, &c., from the port of New York, for the week ending January 25, 1887:

***Dutch West Indies.***

| | Quan. | Val. |
|---|---|---|
| Nails, case | 1 | 13 |
| Mf. iron, pkgs. | 3 | 108 |
| Hdw., pkgs | 10 | 92 |
| Clocks, cs. | 2 | 18 |

***Brussels.***

| | | |
|---|---|---|
| Hdw., cs. | 5 | 98 |

***Copenhagen.***

| | | |
|---|---|---|
| Clocks, cs. | 9 | 164 |
| Hdw., cs. | 5 | 91 |

***Kiel.***

| | | |
|---|---|---|
| Hdw., cs. | 4 | 350 |

***Lubeck.***

| | | |
|---|---|---|
| Mach'y pkgs. | 14 | 900 |
| Ag.imp., pkgs | 3 | 300 |

***Hamburg.***

| | | |
|---|---|---|
| Revolvers, cs. | 3 | 253 |
| Hdw., cs. | 288 | 4,542 |
| Ag.imp., pkgs | 63 | 1,025 |
| Mach'y, pkgs | 6 | 737 |
| Clocks, pkgs. | 59 | 1,685 |
| Knitting machines, cs. | 7 | 535 |
| Sew. ma., cs. | 573 | 8,977 |
| Mf. iron, pkgs | 1 | 120 |
| Metal goods, cs. | 4 | 171 |
| Spelter, lb. | 56,024 | 4,200 |
| Nails, kegs | 55 | 130 |
| Wringers, cs. | 10 | 322 |
| Rifles, cs | 2 | 205 |

***Bremen.***

| | | |
|---|---|---|
| Hdw., cs. | 4 | 106 |
| Clocks, case | 1 | 15 |
| Ag. imp. pkgs. | 328 | 2,300 |
| Mach'y, pkgs. | 2 | 830 |

***Rotterdam.***

| | | |
|---|---|---|
| Hdw., cs. | 67 | 744 |
| Mach'y, pkgs. | 3 | 248 |
| Agate, pks. | 36 | 292 |
| Mf. iron, pkgs | 4 | 120 |

***Gottenburg.***

| | | |
|---|---|---|
| Clocks, case | 45 | 705 |
| Hdw., pkgs. | 27 | 503 |

***Odessa.***

| | | |
|---|---|---|
| Sew. ma., cs. | 2 | 50 |

***Stockholm.***

| | | |
|---|---|---|
| Cutlery, case. | 1 | 50 |

***Liverpool.***

| | | |
|---|---|---|
| Rifles, case | 6 | 591 |
| Hdw., pkgs | 16 | 700 |
| Sew. ma., cs. | 11 | 1,875 |
| M. rollers | 2,593 | 800 |
| Ag.imp., pkgs | 2 | 27 |
| Clocks, pkgs. | 58 | 1,700 |
| Mach'y, pkgs. | 25 | 1,114 |
| Saws, case | 1 | 80 |
| Wire, bbl | 1 | 163 |

***Bristol.***

| | | |
|---|---|---|
| Hdw., cs. | 2 | 216 |

***Danish West Indies.***

| | | |
|---|---|---|
| Mf. iron, pkgs | 4 | 39 |
| Hdw., cs. | 2 | 33 |
| Mach'y, pkge. | 1 | 65 |
| Nails, kegs | 50 | 150 |

***Antwerp.***

| | | |
|---|---|---|
| Hwd., cs. | 54 | 1,167 |
| Pumps, pkge. | 1 | 19 |
| Sew. ma., cs. | 100 | 1,462 |
| Guns, cs. | 7 | 587 |
| Bullets, cs. | 2 | 52 |

***Newcastle.***

| | | |
|---|---|---|
| Mach'y, pkgs. | 7 | 990 |

***London.***

| | | |
|---|---|---|
| Pumps, pkgs. | 4 | 265 |
| Mchy. pkgs | 13 | 1,186 |
| Mfs. of metal | 5 | 183 |
| Clocks, pkgs. | 120 | 2,147 |
| Wringers, cs. | 6 | 70 |
| Hdw., pkgs | 184 | 3,473 |
| Nails, case | 1 | 25 |
| Ag. imp., pkgs | 110 | 188 |
| Guns, case | 1 | 29 |
| Sew ma., cs. | 100 | 1,163 |
| Mf. iron, pkgs. | 20 | 121 |

***Glasgow.***

| | | |
|---|---|---|
| Clocks, cs | 74 | 1,100 |
| Mach'y, pkge. | 1 | 125 |
| Hdw. cs | 27 | 1,212 |
| Agl. imps., pgs | 6 | 275 |
| Sew. mch., cs | 122 | 2,019 |

***Dundee.***

| | | |
|---|---|---|
| Mach'y, pkgs. | 2 | 50 |
| Sew. ma., cs. | 3 | 150 |

***Leith.***

| | | |
|---|---|---|
| Ag. imp., pkgs | 3 | 8 |
| Hwd., case | 1 | 20 |

***Belfast.***

| | | |
|---|---|---|
| Sew. ma., cse | 12 | 420 |
| Mach'y, pkgs | 5 | 450 |

***British West Indies.***

| | | |
|---|---|---|
| Pumps, pkgs. | 2 | 16 |
| Firearms, cse | 1 | 20 |
| Sew. ma., cs. | 2 | 23 |
| Mf. iron, pkgs | 36 | 251 |
| Ag. imp. pkgs | 7 | 40 |
| Cutlery, cs. | 2 | 102 |
| Tinware, cs. | 2 | 22 |
| Hdw., pkgs. | 104 | 1,167 |
| Nails, kegs | 262 | 773 |
| Clocks, cs. | 2 | 30 |
| Mach'y, pkgs. | 28 | 953 |
| Saws, cs. | 2 | 43 |

***British Guiana.***

| | | |
|---|---|---|
| Nails, kegs | 8 | 32 |
| Hdw., cs. | 2 | 32 |
| Pumps | 2 | 3,301 |
| Clocks, case | 1 | 36 |
| W. imp., pkgs | 2 | 85 |

***British East Indies.***

| | | |
|---|---|---|
| Hdw., cs. | 2 | 45 |
| Sew. ma., cs. | 35 | 522 |
| Clocks, cs. | 21 | 460 |

***British Australia.***

| | | |
|---|---|---|
| Pumps, pkgs. | 18 | 1,125 |
| Ag. imp., pkgs | 81 | 1,855 |
| Firearms, cs. | 4 | 559 |
| Wringers, cs. | 23 | 417 |
| Air guns, case | 1 | 50 |
| Sew. ma., cs. | 436 | 7,517 |
| Nails, kegs | 12 | 86 |
| Mf. iron, pkgs. | 657 | 6,397 |
| Hdw. pkgs. | 505 | 7,952 |
| Gun primers, case | 1 | 54 |
| Mach'y, pkgs. | 11 | 1,899 |
| Clocks, cs. | 102 | 3,262 |
| Cartridges, cs. | 9 | 214 |
| Tacks, cs. | 3 | 27 |
| Nails, cs. | 23 | 145 |
| Tin boxes, cs. | 70 | 148 |
| Tinware, cs. | 2 | 200 |

***Canada.***

| | | |
|---|---|---|
| Mach'y, pkge | 1 | 48 |

***British Possessions in Africa.***

| | | |
|---|---|---|
| Nails, kegs | 291 | 927 |
| Ag. imp., pkgs | 226 | 2,993 |
| Pumps, pkgs | 4 | 193 |
| Tinware, cse | 1 | 10 |
| Sew ma., cs | 9 | 176 |
| Hdw., pkgs | 91 | 1,652 |
| Air guns, case | 1 | 22 |
| Clocks, case | 1 | 32 |
| Tacks, cs | 8 | 50 |
| Mf. iron, pkgs | 57 | 427 |
| Cutlery, cs. | 45 | 475 |

***Havre.***

| | | |
|---|---|---|
| Ag. imp., pkgs | 57 | 3,393 |
| Hdw., pkgs | 10 | 64 |
| Mach'y, pkgs | 15 | 1,699 |

***Cuba.***

| | | |
|---|---|---|
| Mf. iron, pkgs | 284 | 1,868 |
| Mach'y, pkgs. | 35 | 1,674 |
| Tin, cs. | 5 | 59 |
| Ag. imp., pkgs. | 4 | 47 |
| Clocks, pkge | 1 | 43 |
| Spikes, kegs | 110 | 328 |
| Nails, kegs. | 95 | 295 |
| Cutlery, cs. | 66 | 1,537 |
| Nails, cs | 4 | 95 |
| Boiler | 1 | 2,520 |
| Cartridges, cs | 7 | 367 |
| Hdw., pkgs. | 69 | 1,182 |
| Tinware, cs. | 12 | 445 |
| Sew. ma. oil, case | 1 | 15 |
| Meters, cs. | 5 | 713 |
| Iron drums | 10 | 70 |
| Metal cloth, cse | 1 | 25 |

***Marseilles.***

| | | |
|---|---|---|
| Ag. imp., pkgs | 5 | 34 |

***Bordeaux.***

| | | |
|---|---|---|
| Mf. iron, pkgs | 10 | 77 |
| Sew. ma., cs. | 40 | 827 |

***Madrid.***

| | | |
|---|---|---|
| Pumps, pkgs. | 6 | 265 |

***Seville.***

| | | |
|---|---|---|
| Clocks, bxs. | 46 | 375 |

***Mexico.***

| | | |
|---|---|---|
| Ag. imp., pkgs | 336 | 5,750 |
| Clocks, cs | 9 | 163 |
| Sew. ma., cs. | 134 | 2,953 |
| Nails, cs. | 12 | 137 |
| Mf. iron, pkgs | 557 | 2,693 |
| Pumps, pkgs. | 21 | 400 |
| Cartridges, cs. | 7 | 198 |
| Iron tank | 1 | 15 |
| Spikes, kegs | 25 | 150 |
| Tacks, cs | 8 | 56 |
| Arms, cs. | 5 | 4,640 |
| Hdw., pkgs | 58 | 873 |
| Tinware, cs. | 3 | 22 |
| Per. caps, cs. | 10 | 410 |
| Cutlery, cs. | 19 | 701 |
| Mach'y, pkgs. | 19 | 1,356 |
| Zinc caps, cs. | 40 | 166 |
| Windmill, cs. | 6 | 85 |

***Lisbon.***

| | | |
|---|---|---|
| Mf. iron, pkgs | 2 | 68 |

***Central America.***

| | | |
|---|---|---|
| Clocks, cs | 3 | 34 |
| Rifles, case | 1 | 24 |
| Wire, cs. | 40 | 264 |
| Hdw., pkgs. | 56 | 1,020 |
| Cutlery, cs. | 41 | 329 |
| Nails, kegs | 78 | 269 |
| Cartridges, cs | 4 | 191 |
| Steel w rope, pkgs | 5 | 210 |
| Sew. ma., cs | 35 | 761 |
| Pumps, pkgs. | 7 | 80 |
| Shot, cs. | 8 | 132 |
| Iron safe | 1 | 80 |
| Mf. pkgs., iron | 105 | 500 |
| Iron, pkgs | 64 | 237 |
| Gun caps, cse | 1 | 46 |
| Tinware, cs. | 3 | 70 |

***Barcelona.***

| | | |
|---|---|---|
| Sew. ma., cs. | 34 | 475 |
| Hdw., cs. | 4 | 116 |

***French Guiana.***

| | | |
|---|---|---|
| Hdw., pkgs. | 3 | 36 |
| Sew. ma., cs. | 2 | 39 |
| Nails, kegs | 6 | 18 |
| Mach'y, pkgs. | 195 | 1,076 |
| Iron, bxs. | 2 | 36 |

***French West Indies.***

| | | |
|---|---|---|
| Mf. iron, pkgs | 7 | 44 |

***Chile.***

| | | |
|---|---|---|
| Clocks, cs. | 19 | 378 |
| Cartridges, cs | 13 | 239 |
| Hdw., pkgs. | 49 | 1,536 |
| Sew. ma., cs. | 5 | 378 |
| Agateware, cs | 11 | 294 |
| Cop'r ware, cs | 3 | 160 |
| Tinware, cs. | 2 | 22 |
| Plumbago, bbls | 6 | 300 |

***Oporto.***

| | | |
|---|---|---|
| Mach'y, pkgs. | 3 | 50 |
| Clocks, bxs. | 72 | 630 |

***Venezuela.***

| | | |
|---|---|---|
| Nails, kegs | 5 | 13 |
| Cutlery, cs. | 3 | 94 |
| Hdw., pkgs. | 121 | 1,197 |
| Mach'y, pkgs. | 2 | 32 |
| Sew. ma. oil, cs. | 12 | 38 |
| Pistols, case | 1 | 33 |
| Mf. iron, pkgs | 209 | 859 |
| Tin, case | 1 | 16 |
| Met. casket, cs | 2 | 110 |
| Sew. ma. cs. | 66 | 1,666 |
| Tinware, case | 1 | 24 |
| Clocks, case | 1 | 43 |

***Messina.***

| | | |
|---|---|---|
| Windmill, cs. | 3 | 46 |

***United States of Colombia.***

| | | |
|---|---|---|
| Sew. ma., cs. | 54 | 993 |
| Hdw., pkgs. | 126 | 2,210 |
| Gun primers, case | 1 | 61 |
| Tinware, cs. | 21 | 298 |
| Cartridges, cs | 152 | 2,167 |
| Clocks, cs. | 6 | 847 |
| Windmills | 2 | 973 |
| Babbitt met., case | 1 | 25 |
| Revolvers, cs. | 4 | 359 |
| Firearms, cs. | 76 | 5,096 |
| Ag. imp., pkgs | 2 | 28 |
| Nails, cs. | 5 | 46 |
| Cutlery, pkgs | 101 | 1,151 |
| Mach'y, pkgs | 12 | 1,419 |
| Mf. iron, pkgs | 239 | 1,122 |
| Gun shells, cs | 35 | 604 |
| Carriages | 2 | 412 |
| Nails, kegs | 442 | 1,012 |
| Pumps, pkgs. | 3 | 225 |
| Iron, pkgs | 232 | 1,278 |
| W. closets, cse | 1 | 22 |
| Brass g'ds, cs. | 2 | 154 |
| Lead pipe, pkge. | 1 | 33 |
| Granite ware, cs | 3 | 166 |

***Cagliari.***

| | | |
|---|---|---|
| Sew. ma., cs. | 20 | 230 |

***Constantinople.***

| | | |
|---|---|---|
| Guns, case | 1 | 16 |

***Trieste.***

| | | |
|---|---|---|
| Pumps, pkgs. | 9 | 294 |

***Peru.***

| | | |
|---|---|---|
| Hdw., case | 1 | 29 |
| Mach'y, pkgs. | 3 | 235 |

***Ecuador.***

| | | |
|---|---|---|
| Guns, case | 1 | 38 |
| Revolvers, cse | 1 | 39 |
| Cartridges case | 1 | 12 |

***Uruguay.***

| | | |
|---|---|---|
| Ag. imp., pkgs | 202 | 2,520 |
| Tacks, cs. | 50 | 190 |
| Cartridges, cs | 10 | 195 |
| Clocks, cs. | 15 | 455 |
| Mach'y, cs. | 2 | 235 |
| Sew. ma., cs. | 107 | 2,480 |
| Hdw., pkgs. | 69 | 1,241 |
| Mf. iron, pkgs | 6 | 125 |
| Sew. ma. oil, cs | 34 | 779 |
| Cutlery, cs. | 14 | 220 |
| Tinware, cs. | 3 | 40 |
| Pumps, cs | 12 | 485 |
| Washing ma., cs. | 8 | 190 |

***San Domingo.***

| | | |
|---|---|---|
| Hdw., pkgs | 5 | 213 |
| Iron, cs. | 80 | 19 |
| Nails, kegs | 30 | 91 |
| Mach'y, cs. | 45 | 325 |
| Sew. ma., cs | 6 | 140 |

***Argentine Republic***

| | | |
|---|---|---|
| Hdw., cs | 346 | 7,636 |
| Water wheel | 1 | 200 |
| Ag. imp., pkgs | 211 | 4,83[illegible] |
| Granite ware, case | | |

# WHOLESALE METAL PRICES, JANUARY 26, 1887.

## METALS.

**IRON.**—DUTY: Bars, 8-10¢ to 1 1-10¢ ℔ ℔; provided that no Bar iron shall pay a less rate of duty than 35 %. Sheet, 1 1-0¢ to 1 5-10¢ ℔ ℔. Band, Hoop and Scroll, 1¢ to 1 4-10¢ ℔ ℔. Railroad Bars weighing more than 25 ℔ ℔ yard, 7-10¢ of 1¢ ℔ ℔.

**Standard American Pig Iron.**

| | | |
|---|---|---|
| Foundry No. 1 X | ℔ ton | $21.50 @ 22.00 |
| Foundry No. 2 X | ℔ ton | 19.50 @ 20.00 |
| Gray Forge | ℔ ton | 18.50 @ 19.00 |

**No. 1 Scotch Pig Iron.**

| | | |
|---|---|---|
| Carnbroe | ℔ ton | $20.50 @ 20.75 |
| Coltness | ℔ ton | 23.50 @ 24.00 |
| Shotts | ℔ ton | 23.00 @ 23.50 |
| Glengarnock | ℔ ton | 22.00 @ 22.50 |
| Gartsherrie | ℔ ton | 22.25 @ 22.50 |
| Langloan | ℔ ton | 23.00 @ 23.50 |
| Summerlee | ℔ ton | 22.75 @ 23.50 |
| Dalmellington | ℔ ton | 21.00 @ 21.50 |
| Eglinton | ℔ ton | 21.00 @ 21.25 |
| Clyde | ℔ ton | 21.00 @ 21.50 |

**Rails.**

| | | |
|---|---|---|
| Steel, at Eastern mills | ℔ ton | $30.00 @ 40.00 |
| Old Rails, Ts | ℔ ton | 25.00 @ 25.25 |

**Scrap.**

| | | |
|---|---|---|
| Wrought, ℔ ton, from yard | | $25 00 @ 26.00 |

**Bar Iron from Store.**

| | | |
|---|---|---|
| Common Iron: ¾ to 2 in. round and square; 1 to 6 in. x⅜ to 1 in | ℔ ℔ | 2.10 @ 2.20¢ |
| Refined Iron: ¾ to 2 in. round and square; 1 to 6 in. x ⅜ to 1 in | ℔ ℔ | 2.30 @ 2.60¢ |
| 1 to 6 in. x¼ and 5-16 | ℔ ℔ | 2.50 @ 2.70¢ |
| Rods—⅜ and 11-16 round and sq | ℔ ℔ | 2.40 @ 2.60¢ |
| Bands—1 to 6x3-16 to No. 12 | ℔ ℔ | 2.60 @ 2.70¢ |
| "Burden's Best" Iron, base price | ℔ ℔ | 3.25 @ .... |
| Burden's "H. B. & S." Iron, base price | ℔ ℔ | 2.75 @ 3¢ |
| Norway Rods | | 5 @ 6¢ |

**Sheet Iron from Store.**

| | | Common American. | R. G. Cleaned. |
|---|---|---|---|
| Nos. 10 to 16 | ℔ ℔ | @ 2.85¢ | 3½¢ |
| 17 to 20 | ℔ ℔ | 2 87½ @ 3.00 | 3½¢ |
| 21 to 24 | ℔ ℔ | @ 3½¢ | 3½¢ |
| 25 and 26 | ℔ ℔ | 3.25 @ .... | 3¾¢ |
| 27 | ℔ ℔ | 3.25 @ 3⅜¢ | 3¾¢ |
| 28 | ℔ ℔ | 3.37½ @ 3½¢ | 4 ¢ |
| | | B B | 2d qual. |
| Galvanized to 20 | ℔ ℔ | 4.80¢ | 4½¢ |
| Galvanized 1 to 24 | ℔ ℔ | 5.20¢ | 4⅞¢ |
| Galvanized, 25 to 26 | ℔ ℔ | 5.60¢ | 5¼¢ |
| Galvanized, 27 | ℔ ℔ | 6 ¢ | 5⅝¢ |
| Galvanized, 28 | ℔ ℔ | 6.50¢ | 6 ¢ |
| American Russia | ℔ ℔ | A 10¢ | B, 9¢ |
| Russia | ℔ ℔ | 9½¢ @ 10 ¢ | |
| American Cold Rolled B. B. | ℔ ℔ | 5 ¢ @ 7 ¢ | |

**Iron Wire.**—(*See Wire.*)

**STEEL.**—DUTY. Ingots, Bars, Sheets, &c., valued at 4¢ ℔ ℔ or less, 45 % ad. val.; valued above 4¢ and not above 7¢ ℔ ℔, 2¢ ℔ ℔; valued above 7¢ and not above 10¢ ℔ ℔, 2½¢ ℔ ℔; valued above 10¢ ℔ ℔, 3½¢ ℔ ℔. *Extras.*—Steel Bars, Rods, &c., cold hammered or polished, in any way in addition to ordinary hot rolling, 1¼¢ ℔ ℔ in addition to above; Steel Circular Saw Plates, 1¢ ℔ ℔ in addition to the above.

**American Cast Steel.**

For American Steel, see Pittsburgh quotations.

**Chrome Steel.**

| | | |
|---|---|---|
| Foot Steel, ordinary sizes, ⅜ to 3 inches, net | | 10 @ 14¢ |
| Adamantine Shoes and Dies | | 8 @ .¢ |
| Magnet Steel | | 14 @ .¢ |

**English Steel.**

| | | |
|---|---|---|
| Best Cast | ℔ ℔ | 15 ¢ |
| Extra Cast | ℔ ℔ | 16½ @ 17 ¢ |
| Circular Saw Plates | ℔ ℔ | 14 ¢ |
| Swaged, Cast | ℔ ℔ | 16 ¢ |
| Best Double Shear | ℔ ℔ | 15 ¢ |
| Blister, 1st quality | ℔ ℔ | 13 ¢ |
| German Steel, Best | ℔ ℔ | 10 ¢ |
| 2d quality | ℔ ℔ | 9 ¢ |
| 3d quality | ℔ ℔ | 8 ¢ |
| Sheet Cast Steel, 1st quality | ℔ ℔ | 15 ¢ |
| 2d quality | ℔ ℔ | 14 ¢ |
| 3d quality | ℔ ℔ | 12½¢ |

**TIN.**—DUTY Plates, Sheets, Tagger and Terne, 1¢ ℔ ℔; Bars, Block and Pigs free.

| | | |
|---|---|---|
| Banca | ℔ ℔ | 23½¢ @ 24 ¢ |
| Straits | ℔ ℔ | 23 ¢ @ 23½¢ |
| English | ℔ ℔ | 23½¢ @ 24 ¢ |
| Bar | ℔ ℔ | 24 ¢ @ 25 ¢ |

**Charcoal Tin Plates.**

| | | |
|---|---|---|
| I C 10x14 225 sheets | ℔ box | $5.00 @ 6.87½ |
| I C 12x12 225 sheets | " | 5.00 @ 6.87½ |
| C 20x28, 112 " | " | 10.25 @ 14 75 |
| X 10x14 225 sheets | " | 6.00 @ 9.37½ |
| X 12x12 225 sheets | | 6.00 @ 9.37½ |
| I X 14x20, 112 " | | 6.00 @ 9.37½ |
| D C 12½x17, 100 " | | 5.00 @ 5.75 |
| D X 12½x17, 100 " | | 6.00 @ 7.25 |
| For each additional X add | " | 1.25 @ 2 25 |

**Coke Tin Plates.**

| | Best. | Ordinary. |
|---|---|---|
| C 10x14 | $4.50 | $4.35 @ 4.45 |
| C 14x20 | | |
| C 12x12 | 4.75 | 4.60 @ 4.65 |
| I C 10x20, gutters, 225 sheets | 8.00 | 7.25 |
| I C 20x28 112 sheets | | 9.00 @ 9.50 |

**Terne Plates.**

| | | |
|---|---|---|
| Prime Char. 3d. quality | | |
| I C 14x20 M.F. $6.50 | | $13.25 |
| I C 14x20 Old Process | | 6.50 |
| I C 20x28 " | | 13.25 |
| I C 14x20 | $4.50 @ 4 75 | 4.37½ 4.25 |
| I X 14x20 | 5.75 @ 6.00 | |
| I C 20x28 | 8.75 @ 9.20 | 8.75 8.40 @ 8.70 |
| I X 20x28 | 11.00 @ 12 00 | |

**Tin Boiler Plates.**

| | | |
|---|---|---|
| IXX 14x26, 2 sheets for No. 7, 112 sheets | | @ $12.00 |
| IXX 14x28, 2 " " No. 8, " | | @ 13.00 |
| IXX 14x31, 2 " " No. 9, " | | @ 15.00 |

**COPPER.**—DUTY: Pig, Bar and Ingot, 4¢; Old Copper, 5¢ ℔ ℔. Manufactured (including all articles of which Copper is a component of chief value), 35 % ad valorem.

| | | |
|---|---|---|
| Ingot, Lake | ℔ ℔ | 12 ¢ @ 12½¢ |
| Ingot, Baltimore | " | 10¾¢ @ 11 ¢ |
| Ingot Anchor | " | 11½¢ @ 12 ¢ |

**Cold Rolled Sheet.**

| | | |
|---|---|---|
| 16 oz. per square foot, and heavier | ℔ ℔. | 19¢ |
| 14 and 15 oz. per square foot | ℔ ℔. | 21¢ |
| 12 and 13 oz. per square foot | ℔ ℔. | 23¢ |
| 10 and 11 oz. per square foot | ℔ ℔. | 24¢ |

TINNING.

| | |
|---|---|
| Sheets, one side, 10, 12 and 14 x 48 | each, 8¢ |
| Sheets, one side, other sizes | ℔ square foot 2½¢ |
| For tinning both sides, double the above prices. | |
| For tinning boiler sizes, 9 in., 14 x 60 | each, 15¢ |
| For tinning boiler sizes, 8 in., 14 x 56 | each, 13¢ |
| For tinning boiler sizes, 7 in., 14 x 52 | each, 11¢ |

**Sheathing Copper. (14 x 48.)**

| | Hot Rolled. | Cold. Rolled |
|---|---|---|
| 16 oz. to sq. ft. and heavier, per lb. | 18¢ | 19¢ |
| 14 oz. and up to 16 oz., per lb. | 19¢ | 20¢ |
| 12 oz. and up to 14 oz., per lb. | 20¢ | 21¢ |

Tinning, 6 cents each.

**Copper Bottoms.**

| | | |
|---|---|---|
| Pits and Flats, 14 oz | ℔ ℔ | 21¢ |
| Pits and Flats, 12 oz | ℔ ℔ | 22¢ |

**O'Neill's Patent Planished Copper.**—Net.

14x48

| | | |
|---|---|---|
| 14 and 16 oz. and heavier. 27¢ By the case | ℔ ℔ | 26¢ |
| 12 oz. and lighter 30¢ " " " | | 28¢ |

*Boiler Sizes.*

7 in., 14x52. 8 in., 14x56. 9 in., 14x60.

| | | |
|---|---|---|
| and 16 oz. and heavier. 29¢ By the case | ℔ ℔ | 28¢ |

And all sizes not over 30 in. wide.)

24x48 and 30x60.

| | | |
|---|---|---|
| and 16 oz. and heavier | ℔ ℔ | 31¢ |
| oz | " | 34¢ |

Planished Brass same price as Planished Copper

**Copper Wire.**—(*See Wire.*)

**Sheathing Metal.**

| | | |
|---|---|---|
| Yellow Sheathing Metal, ℔ ℔ | | 18¢ @ ... |

**BRASS AND GERMAN SILVER.**

*Brown & Sharpe's Gauge the Standard for Metal; Old English Gauge the Standard for Wire.*

Prices Manufacturers' Price List, January 17, 1886 dis. 20 @ 20 %

**LEAD.**—DUTY: Pig, $2 ℔ 100 ℔; Old Lead, 2¢ ℔ ℔; Pipe and Sheet, 3¢ ℔ ℔.

| | |
|---|---|
| Pig | 4⅝ @ 4⅞¢ |
| Bar | 5¼ @ 5½¢ |
| Pipe | 7¢, dis 20 % |
| Block Tin Pipe | 40¢, dis 20 % |
| Tin Lined Pipe | 15¢, dis 20 % |
| Sheet | 7¾¢, dis 20 % |
| Shot, ℔ bag, 25 ℔ | Drop, $1.60; Buck, $1.85 |
| Chilled Shot, ℔ bag, 25 ℔ | $1.85 |

**ANTIMONY.**

| | | |
|---|---|---|
| Hallett's | ℔ ℔ | 7¾ @ 9 ¢ |
| Cookson | " | 9¾ @ 10 ¢ |

**SPELTER**—Duty: Pigs, Bars and Plates, $1.50 ℔ 100 lbs.

| | |
|---|---|
| American, cash | 4⅝ ¢ @ 5¢ |
| Bergenport | 9¢ |

**ZINC**—Duty: Pig or Block, $1.50 ℔ 100 lbs. Sheet, 2½¢ ℔ ℔.

| | |
|---|---|
| 600 ℔ casks | 5.45 @ 5.70¢ |
| Zinc.—Open | .6 @ 6¼¢ |
| Zinc Tubing | dis. 10 @ 20 % |

**Zinc Tubing**—Dis. 25 %.

| | |
|---|---|
| Plain | .27 |
| Fancy | .33 |
| Scotch and Extra Patterns | .36 |

**BABBITT METAL.**

| | | |
|---|---|---|
| N. P. U | ℔ ℔ | 6½ @ 7¢ |
| X | | .10¢ |
| X X | | .15¢ |
| J. B | | .20¢ |

**WIRE.**

**Market Wire.**—Put up in 68 ℔ bundles.

| Nos. | 00 to 9, | 10, 11, | 12, | 13, 14, | 15, 16, | 17, | 18. |
|---|---|---|---|---|---|---|---|
| | 10 | 11 | 11½ | 12½ | 14 | 15 | 16 |

| | |
|---|---|
| Bright Market Wire | dis 67½ % |
| " Charcoal | dis 47½ % |
| " Bale Wire, Nos. 7 to 12 | dis 62½ % |
| Annealed Market Wire; " Fence Wire, Nos. 8 and 9; " Grape Wire, Nos. 10 to 14 | dis 67½ % |
| Coppered Market Wire | dis. 62½ % |
| " Bale Wire, Nos. 7 to 12 | dis. 57½ % |
| Galvanized Market Wire; " Fence Wire | dis 57 ½% |

**Stone or Weaving Wire.**

| Nos. | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cents | 14 | 15 | 16 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| Nos. | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | .. |
| Cents | 28 | 29 | 30 | 32 | 33 | 35 | 37 | 40 | 45 | 55 | .. |

| | | |
|---|---|---|
| Nos. 16 to 18 | dis. 70 @ | 70 % |
| 19 to 26 | " | 70 % |
| 27 to 36 | " 75 @ | 75 % |
| Galvanized Stone Wire | " | 50 % |

**Steel Wire.**

| | |
|---|---|
| Cast Steel, Steel Wire list | dis. 50 % |

**Brass and Copper Wire.**

Old English Gauge the Standard.—Dis 20 @ 25.

| | Common High Brass | Low Brass | Gilding Bronze and Copper. |
|---|---|---|---|
| All Nos. to No. 16, inclusive | $0.22 | $0.26 | $0.30 |
| No. 17 and 18 | .23 | .27 | .31 |
| " 19 and 20 | .24 | .28 | .32 |
| " 21 | .25 | .29 | .33 |
| " 22 | .26 | .30 | .34 |
| " 23 | .28 | .32 | .36 |
| " 24 | .30 | .34 | .38 |
| " 25 | .32 | .36 | .40 |
| 26 | .35 | .39 | .43 |
| 27 | .38 | .42 | .46 |
| " 28 | .42 | .46 | .51 |
| " 29 | .45 | .49 | .54 |
| " 30 | .48 | .52 | .62 |
| " 31 | .51 | .55 | .67 |
| " 32 | .55 | .59 | .73 |
| " 33 | .59 | .63 | .82 |
| " 34 | .64 | .68 | .95 |
| " 35 | .70 | .74 | 1.30 |
| " 36 | .76 | .80 | 1.50 |
| " 37 | 1.00 | 1.04 | 1.70 |
| " 38 | 1.30 | 1.34 | 2.00 |
| " 39 | 2.00 | 2.00 | 3.25 |
| " 40 | 2.60 | 2.60 | 5.75 |

Spring Wire, 2 cents per pound advance. Whitened Wire, 3 cents per pound advance. Flat, Square and Half-Round Wire, 4 cents advance on Round Wire. Fancy Wire, not less than 10 cents advance on Round Wire. Spooling on one-pound Spools, 12 cents per pound extra. Spooling on ten-pound Spools or more. 2 cents per pound extra.

**MISCELLANEOUS TINNERS' STOCK.**

**Solder.**

| | | |
|---|---|---|
| ½ & ½, Warranted | .15 | @ 15½¢ |
| Extra | .14 | @ 14½¢ |
| No. 1 Refined | .12 | @ 13 ¢ |
| No. 2 Solder | .12 | @ 12½¢ |
| Extra wiping | .11¾ | @ 12¼¢ |

**Rivets.**

| | |
|---|---|
| Iron and Tinned, new list, Dec. 10, 1881 | dis. 60 % |
| In bulk, new list, Dec. 10, 1881 | dis. 45 % |
| Copper Rivets and Burrs | dis. 50&10 @ 60 % |

| Nos. | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 1 |
|---|---|---|---|---|---|---|---|---|---|
| ℔ ℔ | 49¢ | 50¢ | 52¢ | 54¢ | 56¢ | 58¢ | 60¢ | 65¢ | 70¢ |

**Stove Bolts.**

| | |
|---|---|
| American Screw Co.'s | dis. 70 % |
| R. B. & W. | dis. 70 % |
| R. & E. Mfg. Co. | dis. 65&10 % |

**FRENCH GLASS.**

*January 27, 1885. Per Box, 50 feet*

Single Thick.

| Sizes. | 1st. | 2d. | 3d. | 4th. |
|---|---|---|---|---|
| | E F H | I E H | H H | H B |
| 25 6 x 8 to 10 x 15 | $10.50 | $9.00 | $8.50 | $8.00 |
| 40 11 x 14 to 16 x 24 | 11.50 | 10.75 | 10.25 | 9.75 |
| 50 18 x 22 to 20 x 30 | 15.50 | 14.00 | 13.00 | 12.50 |
| 54 15 x 36 to 24 x 30 | 16.50 | 15.00 | 13.50 | |
| 60 26 x 28 to 24 x 36 | 17.75 | 16.25 | 14.75 | |
| 70 26 x 36 to 26 x 44 | 19 00 | 17.50 | 15.25 | |
| 80 26 x 46 to 30 x 50 | 21.00 | 19.50 | 17.00 | |
| 84 30 x 52 to 30 x 54 | 22.00 | 20.25 | 18.00 | |
| 90 30 x 56 to 34 x 56 | 23.00 | 21.25 | 19.00 | |
| 94 34 x 58 to 34 x 60 | 24.00 | 22.75 | 21.00 | |
| 100 36 x 60 to 40 x 60 | 26.50 | 24.50 | 23.00 | |

Double Thick.

| Sizes. | 1st. | 2d. | 3d. | 4th |
|---|---|---|---|---|
| | E F H D | I E H D | H H D | H B D |
| 25 6 x 8 to 10 x 15 | $13.00 | $12.50 | $12.00 | $11.50 |
| 40 11 x 14 to 16 x 24 | 16.00 | 15.00 | 14.50 | |
| 50 18 x 22 to 20 x 30 | 20.50 | 19.50 | 18.50 | |
| 54 15 x 36 to 24 x 30 | 22.00 | 20.75 | 19.50 | |
| 60 26 x 28 to 24 x 36 | 25.00 | 23.00 | 21.50 | |
| 70 26 x 36 to 26 x 44 | 26.00 | 25.00 | 23.00 | |
| 80 26 x 46 to 30 x 50 | 28.00 | 26.50 | 24.50 | |
| 84 30 x 52 to 30 x 54 | 30.00 | 28.00 | 26.00 | |
| 90 30 x 56 to 34 x 56 | 31.00 | 30.00 | 28.00 | |
| 94 34 x 58 to 34 x 60 | 32.50 | 31.00 | 29.00 | |
| 100 36 x 60 to 40 x 60 | 35.00 | 33.50 | 32.00 | |

Sizes above—$15 per box extra for every 5 inches. Discount 70&10 @ 70&10&5 %.

**PAPER STOCK, &c.**

(*Dealers' Selling Prices.*)

| | Cents | ℔ ℔. |
|---|---|---|
| White Shirt Cuttings, No. 1 | 6¼ @ | 6½ |
| " " No. 2 | 5¼ @ | 5⅝ |
| Mill Assorted Whites | 4½ @ | 5 |
| Unbleached Muslins | 5 @ | 5¼ |
| City Whites, No. 1 | 3⅞ @ | 4 |
| City Whites, No. 2 | 1⅞ @ | 2 |
| New Canton Flannels | 4½ @ | 4¾ |
| New Seconds, light | 3⅝ @ | 4 |
| " dark | 2½ @ | 2¾ |
| Cotton Canvas | 4½ @ | 4⅞ |
| Linen Canvas No. 1 | 4 @ | 4½ |
| Seconds, City No. 1 | 1¼ @ | 1⅝ |
| Seconds, City No. 2 | 1 @ | 1¼ |
| Colors, ℔ cwt | 40 @ | 50 |
| Manila Rope | 2¾ @ | 2⅞ |
| " Tarred | 2½ @ | 2¾ |
| Gunny Bagging, No. 1 | 1⅞ @ | 1⅞ |
| " No. 2 | 1⅜ @ | 1½ |
| Kentucky Bagging | 4 @ | ... |
| Burlap Bagging, No. 1 | 1¾ @ | 1⅞ |
| Tar Shakings | 1¾ @ | 2 |
| Hemp Twine Stock | 3¼ @ | 3½ |
| Hard White Shavings, No. 1 | 3⅜ @ | 3¾ |
| Soft White Shavings, No. 1 | 2½ @ | 2¾ |
| White Shavings, No. 2, Soft | 2¼ @ | 2½ |
| Mixed Shavings, part White | 1⅝ @ | 1⅞ |
| Ledger and Writing | 2⅝ @ | 2⅞ |
| Solid Stock | 1⅜ @ | 1½ |
| Book Stock, No 1, light | 1 @ | 1⅛ |
| Old Newspapers | 1⅛ @ | 1¼ |
| Pure Manilas | 1½ @ | 1⅝ |
| Bogus Manilas and Hardwares, cwt | 60 @ | 100 |
| Commons, ℔ 100 ℔ | 55 @ | 75 |
| Binders' Board Cuttings | ⅛ @ | ⅜ |
| Straw Board Cuttings, ℔ cwt | 65 @ | 75 |

**PAINTS, OILS, &c.**

**Paints.**

| | | |
|---|---|---|
| Black, Lamp—Coach Painters' | ℔ ℔ | 32 @ 34¢ |
| Ordinary | | 26 |
| Black Ivory Drop, fair | | 18 @ 18¢ |
| " " best | | 20¢ |
| Black Paint, in oil | kegs, 8¢; assorted cans, | 11¢ |
| Blue, Prussian, fair to best | | 40 @ 55¢ |
| " " " in oil | | 45 @ 55¢ |
| " Chinese dry | | 70¢ |
| " Ultramarine | | 18 @ 30¢ |
| Brown, Spanish | | 1¼¢ |
| " Van Dyke | | 10 @ 12¢ |
| Dryers, Patent American | asst'd cans, 9¢; kegs, | 7¢ |
| Green Chrome | | 15 @ 23¢ |
| " " in oil | | 14 @ 18 @ 25¢ |
| " Paris | good, 20¢; best, | 25¢ |
| " " in oil | good, 30¢; best, | 35¢ |
| Iron Paint, Bright Red | ℔ ℔ | 5¼¢ |
| " Brown | " | 1½¢ |
| " Purple | " | 3¢ |
| " Ground in oil, Bright Red | | 6½¢ |
| " " " Red | | 5½¢ |
| " " " Brown | " | 5½¢ |
| " " " Purple | " | 6¢ |
| Litharge | | 6½¢ |
| Mineral Paints | | 2 @ 4¢ |
| Orange Mineral | | 10¢ |
| Red Lead American | | 6½¢ |
| Venetian (Eng.) dry | | $1.65 @ $1.70 |
| " " in oil | asst'd cans, 11¢; kegs, | 8¢ |
| " Indian Dry | | 9 @ 12¢ |
| Rose Pink | | 10 @ 13¢ |
| Sienna, American Raw, powdered | | 4¢ |
| " Burnt, powdered | | 4½¢ |
| " " in oil | | 10 @ 16 @ 20¢ |
| " Raw | | 11 @ 15 @ 25¢ |
| Umber, Burnt, powdered | | 4 @ 8¢ |
| " " in oil | | 9 @ 12 @ 15¢ |
| " Raw, powdered | | 4 @ 7½¢ |
| " " in oil | | 9 @ 12 @ 15¢ |
| Vermilion, Chinese | | .90¢ |
| " English | | 55 @ 60¢ |
| " American, Common | | .15¢ |
| White Lead, American, pure dry | | 6¢ |
| " " " in oil | | 7 @ 7½¢ |
| White Paris, English Prime | | 2 @ 2½¢ |
| Yellow Ochre, French | | $1.75 |
| " " " in oil | asst'd cans, 11¢; kegs, | 8¢ |
| " " Vermont | in casks, | 1½¢ |
| Yellow Chrome | | 17 @ 27¢ |
| " " in oil | | 14 @ 18 @ 20¢ |
| Zinc White, American No. 1, dry | | 5 @ 6¢ |
| " " No. 1, in oil | | 3¢ |
| " French (Paris Dry) | | 5½ @ 7½¢ |
| " " in oil | | .10 @ 11¢ |

**Oils.**

| | | |
|---|---|---|
| Bleached Whale, ℔ gal | | 40 @ 41¢ |
| " Sperm, ℔ gal | | 75 @ 80¢ |
| " Elephant, ℔ gal | | 60¢ |
| Drilling | | 35¢ |
| Empire Cylinder | | 60¢ |
| Engine | | 40¢ |
| Fish Oil, Pressed | | 25¢ |
| Lard, Prime Winter | | 53 @ 54¢ |
| " No. 1 Extra | | 46¢ |
| Linseed, Raw, in casks and bbls | | 41 @ 42¢ |
| " Boiled, " " | | 44 @ 45¢ |
| " Western, " " | | 39 @ 40¢ |
| Calcutta | | 51¢ |
| Machinery | | 28 @ 35¢ |
| Miners' Oil | | 55¢ |
| Neatsfoot | | 50¢ |
| Signal | | 45¢ |
| Tallow | | 9 @ 15¢ |
| West Virginia | | |

**Sundries.**

| | | |
|---|---|---|
| Asphaltum, Cuban, ℔ ℔ | | 5½ @ 6½¢ |
| " Egyptian | | 8 @ 9½¢ |
| Benzine, 66° | ℔ gal. | 8½ @ 9½¢ |
| Coal Tar | ℔ bbl. | $3.00 and $4.00 |
| Chalk, ℔ 100 ℔ | | 45¢ |
| " Block | | 75¢ |
| Crucibles No. 14 and upward, per number | | 3½¢ |
| Grain Emery, 300 ℔ kegs | | 4 @ 4½¢ |
| Flour Emery, finest quality | | 2¾¢ |
| Frostings | | 30 @ 35¢ |
| Glue, White | | 24 ℔ 30¢ |
| " Sheet | | .20¢ |
| Glaziers' Points, Zinc, ℔ box | | $4.75 |
| Gum, Copal | | .38¢ |
| " Damar | | .25¢ |
| " Shellac, English | | .30¢ |
| " " dark | | 25¢ |
| Mineral Wool, ordinary, ℔ ℔ | | 1 @ 1½¢ |
| " " extra | | 3 @ 3½¢ |
| Naphtha, 59° | | 9 @ 10¢ |
| Naphtha, 76° | | 9½ @ 10½¢ |
| Pumice Stone, selected Lumps | | 3 @ 6¢ |
| " " powdered | | 2¼ @ 3½ |
| Pine Tar, bbls | | $2.25 @ $2.50 |
| Pitch | | $1.50 |
| Plumbago E. I. Po., ℔ ℔ | | 4 @ 6¢ |
| " American, ℔ ℔ | | 6 @ 10¢ |
| " Gun Powder Glazing, ℔ ℔ | | 10¢ |
| " Shot Polish ℔ ℔ | | 10¢ |
| Putty, in bladders | | 2¼¢ |
| " in bulk | | 1½ @ 2 |
| Rosin—Common and Good—Strained | | $1.65 |
| " E & F | | $1.40 @ $1.70 |
| " G & H | | $1.80 @ $2.25 |
| " I & K | | $2.50 @ $2.75 |
| " M & N | | $3.25 @ $3.50 |
| Spirits Turpentine, ℔ gal | | 39½ @ 40½¢ |
| Stove Polish, Dixon's | ℔ gross | $6.00 |
| " Rising Sun | " | 5.50 |
| " Gem | | 4.00 |
| " Jet Black | " | 3.00 |
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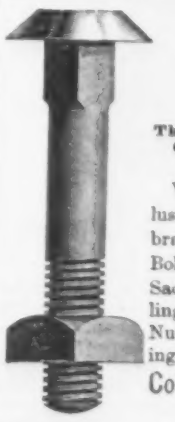
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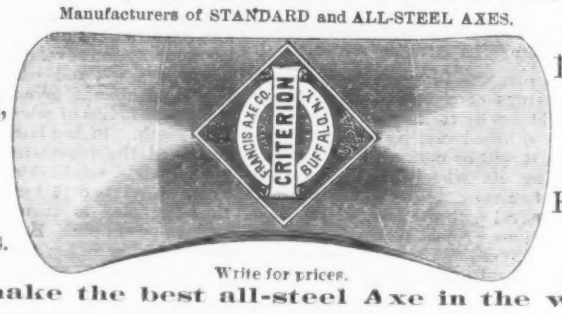

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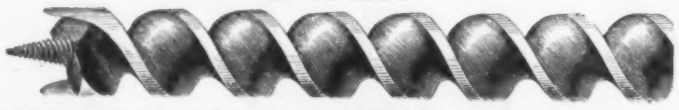
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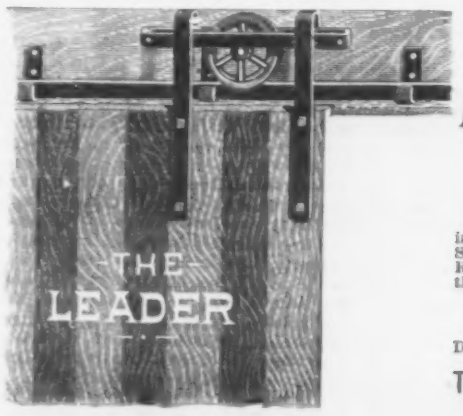

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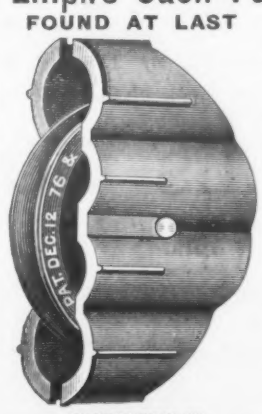


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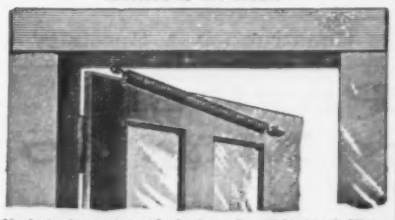

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A represents the stationary guiding and locking bar which receives the operating rod C.—B forms with arm E & bracket F the connection with the transom. D is the adjustable guide to hold the guiding & operating rod to the door casing. Handle G in combination with parts A & C forms a novel locking device and will hold the transom in any desired position no matter how the transom may be hinged.

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Wrought Iron.
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IT EXCELS ALL OTHERS
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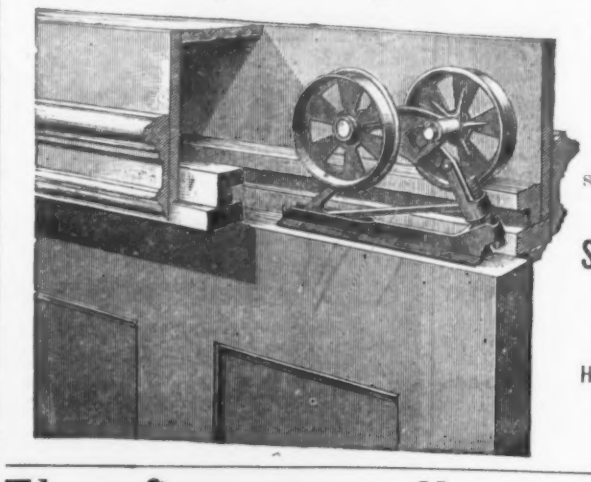

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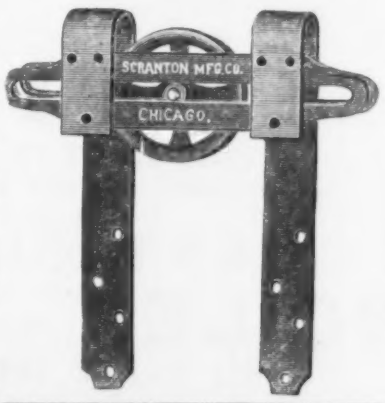


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These Hangers are absolutely without competition in strength, style and price. Samples sent to the Trade for inspection and exhibition, and special prices quoted on application.

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*The most perfect Anti-Friction Hanger in the Market,*
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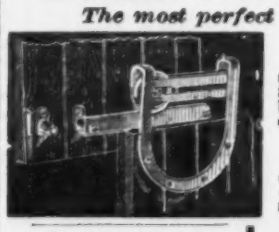

It is made of steel throughout, except the wheel which has a steel axle. It will not break. It is practically free from wear. It is almost noiseless in action. It requires no oil. It has a broad bearing on the door, and keeps in line. It is by far the most durable. It may be used with any track. It is always in order.

LANE'S PATENT TRACK

Is made of steel and is easily put in position. Catches and holds no snow or ice. Door hung thereon cannot jump the track. Is not subject to decay. Requires no fitting, but is ready at once. May be used with hangers of other manufacture.

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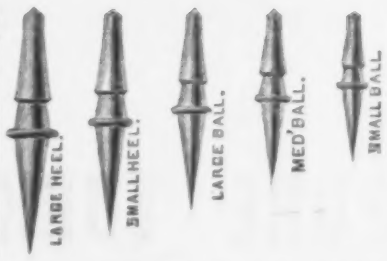


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Crucible Steel
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Heel Calks " 50 " 500 " "

*Samples and Prices sent on Application.*

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Samson Window Cord.

Solid Braided Lines for Window Cord, Railroad Bell Cord, Masons' Lines, Garden Lines, Clothes Lines, &c., &c. Send for Samples.

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### The Springfield Roadster.

The illustrations which we give herewith represent this bicycle, which is manufactured under the Yost & McCune patent by the Springfield Bicycle Mfg. Company, Springfield, Mass., for whom John P. Lovell's Sons, Boston, Mass., are agents. Fig. 1 gives a general view of the machine, while some of its special features are illustrated in Figs. 2, 3 and 4. Fig. 2 shows the lever, pedal, gear and clutch, while Fig. 3 shows the gear and bearing-case fastening, with lever and pedal. The manner in which the change of position of the fulcrum is effected for adaptation to a tall rider is shown in Fig. 4, a similar change being made for a short rider. This machine, which is put on the market as combining safety, strength, speed, low price and durability, is described as strong, because made of the best weldless steel tubing and steel forgings, and as having speed because a larger per cent. of the power expended is gained by the use of the lever than by the crank motion. The safety of this machine is a point upon which the company lay special emphasis as resulting from the device in its construction, which is alluded to as rendering it impossible to take a header. In their circular describing it the company refer to this feature, and in explaining why headers cannot be taken they say: "When the large wheel strikes an obstruction the pivotal point is changed from the axle to the point of contact with the obstruction. The power being applied back of the center of large wheel and directly underneath the weight of the body, with the levers forced downward, it relieves the blow, and the tendency is for the wheel to pass over the obstruction without materially checking its revolution. But should the revolution of the large wheel be checked for an instant the momentum would raise the rear wheel sufficiently to lock the fork and backbone to the clutch, and thus force the large wheel over the obstruction by its own momentum and the power applied by the levers. The locking of the backbone and fork to the clutch prevents them from traveling forward after the speed of the large wheel has been retarded, and the weight of the body, combined with the power of the lever, forces the wheel over the obstruction. In short, without clutch lever the backbone and fork cannot be forced forward without revolving the large wheel. By this means we change the pivotal point from the axle to the point of obstruction, thus preventing the rider from traveling faster than his wheel and taking a header by coming in contact with an obstruction." Besides the above, they make the following points in favor of this machine: That it is especially adapted for hill climbing; that it is safe for coasting; that from the use of the lever instead of the crank long-distance road riding is made easy, and that it commends itself to business men and all riders as safe under all circumstances. It has nickel-plated handle bars, fork head and levers, and is finished in black enamel with rocking pedals and adjustable suspension saddle. The price complete is $75.

*Fig. 1.—The Springfield Roadster.*

*Fig. 2.—Showing Lever, Pedal, Gear and Clutch from its Inner Side*

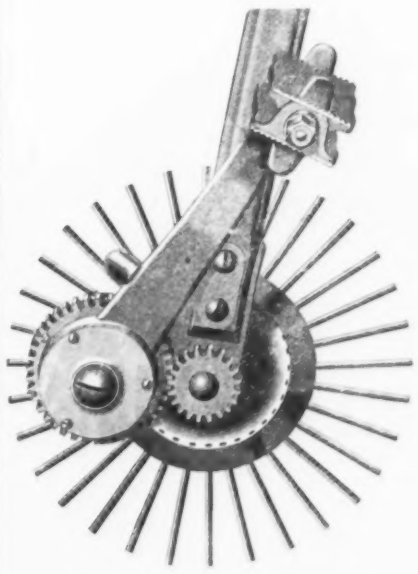


*Fig. 3.—Showing Gear and Bearing Case Fastening, with Lever and Pedal.*

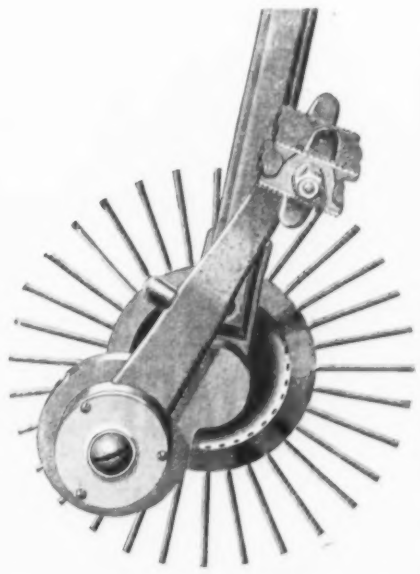
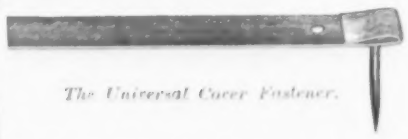


*Fig. 4.—Showing Method of Change of Position of Fulcrum from the Center, for a Tall Rider.*

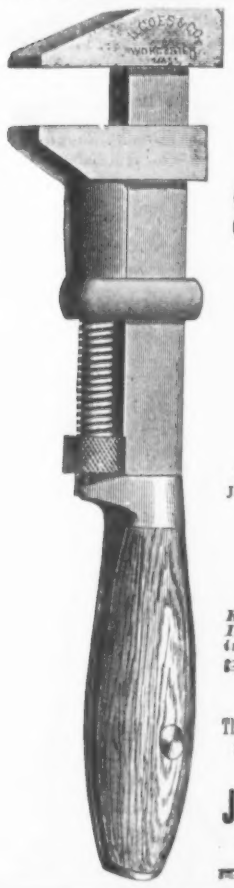
### The Universal Cover Fastener.

Our attention has recently been called to a fastener manufactured under Stegner's patent by A. G. Bradish, of West Randolph, Vt. A cut of the device is presented herewith. It is called the Universal tub and box fastener. The fastener consists of a strip of tin, through which a nail or tack is inserted near the end, the metal being bent back over the head of the nail. In the case of the fastener being used for the cover of grape baskets the nail is required in only one end; for other purposes a nail is inserted in each end. After the article has been fixed in place by the nail, in the case of a grape basket, the opposite end would be bent over the frame of the basket so as to secure it. The special feature of this device is that the tin and the nail are combined in such a way that there is no possibility of their slipping apart. It is estimated that five times as much can be accomplished in the same time with this device as with those that have the nail separate. Fasteners for baskets, as manufactured by Mr. Bradish, are ⅞ inch wide and 2½ inches long. The free end can be fastened by bending either upon the outside or or inside of the lower edge of the rim around the top of the basket.



*The Universal Cover Fastener.*

J. S. Charles, writing from Omaha to the *Scientific American*, says: "Having occasion to drill through a very hard piece of steel, I tried a saturated solution of camphor (alcohol and gum camphor), and the result was marvelous, the drill apparently "biting" its way through the steel. Thinking your readers might be profited by a knowledge of this feature in drilling, I offer the same for trial, with the hope that those using it may be as well satisfied with the results as your subscriber has been."



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GENUINE IMPROVED

**Knife Handle**

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ESTABLISHED IN 1839.

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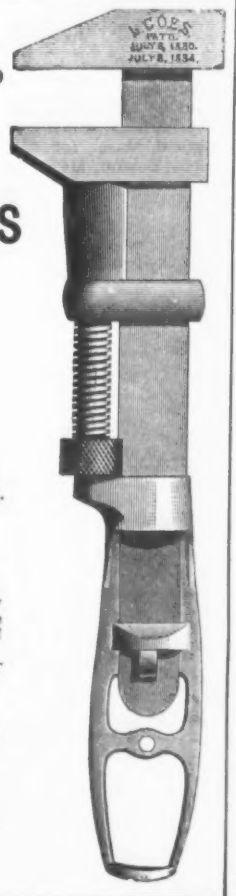

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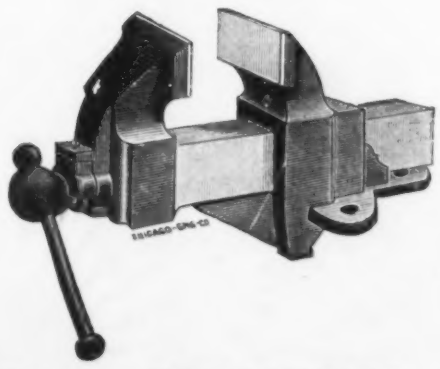

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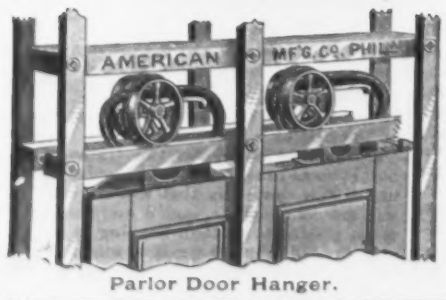


Parlor Door Hanger.

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The attention of Hematite ore miners is called to our new Jig. The simplest and most effective separator now in use.

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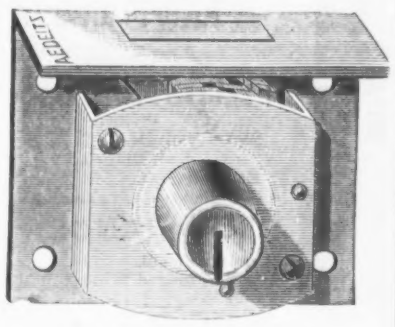


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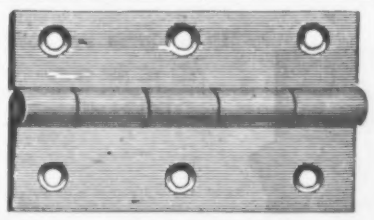

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An entirely novel construction. "They have no equal." No Cog Wheels, Ratchets, Pawls, Gum Balls or other Friction Devices to wear out in a short time. Easy Motion, Powerful Blast, Noiseless and Durable. Guaranteed to give entire satisfaction. Write for catalogue and prices.

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BRITISH PATENTS secured daily. Provisional protection (12 months) from 45/; completing patent for four years, £5. 10/ without drawings, or £6. 10/ including drawings. Full patent at first, £2. Patents sold or licensed. Large commercial connection. S. S. BROMHEAD, C. E., Mem. Soc. Arts, Patent and Registration Agent, 97 Newgate street, London.

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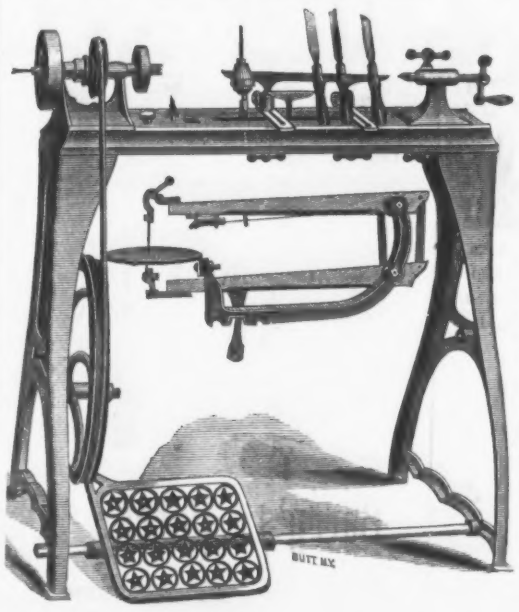

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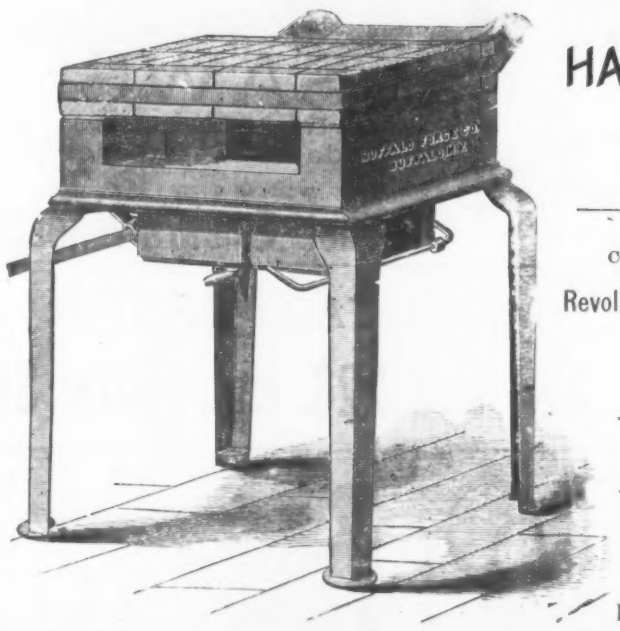

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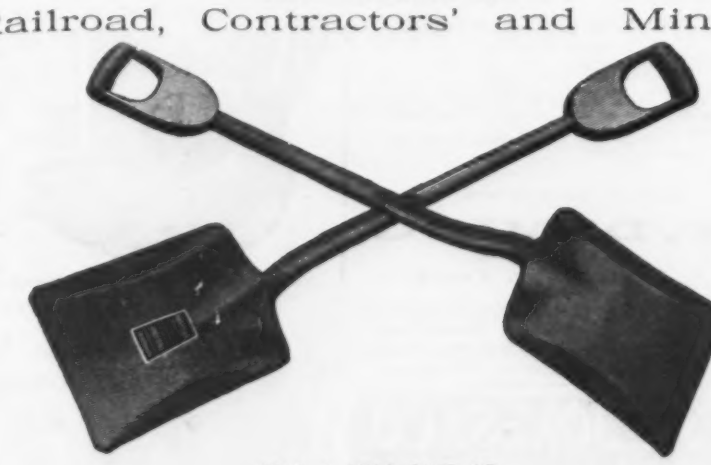

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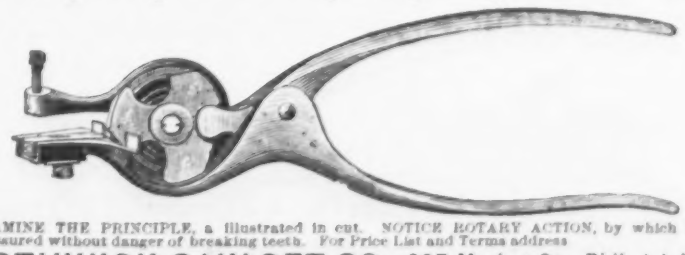

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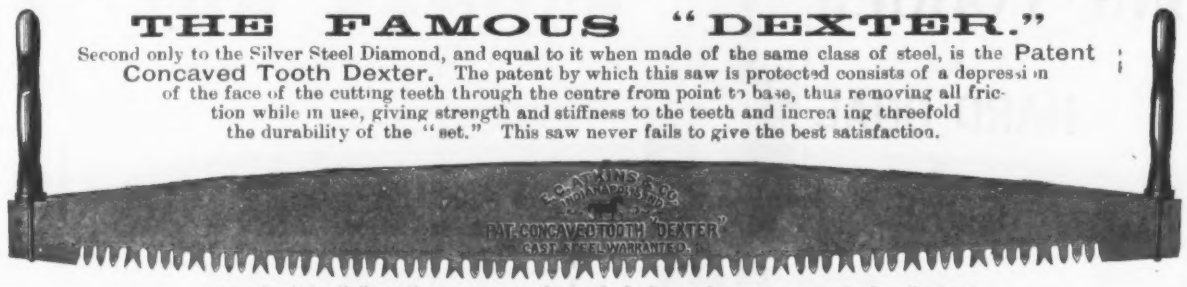


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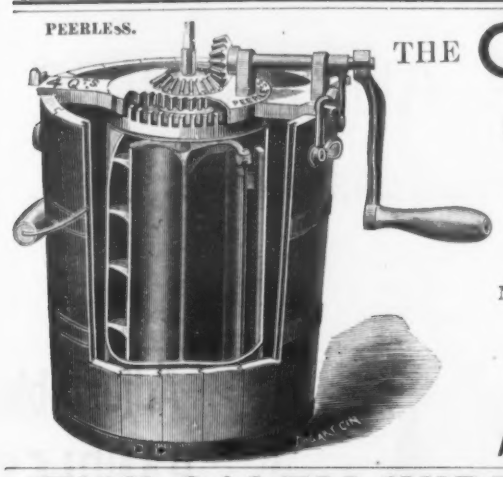

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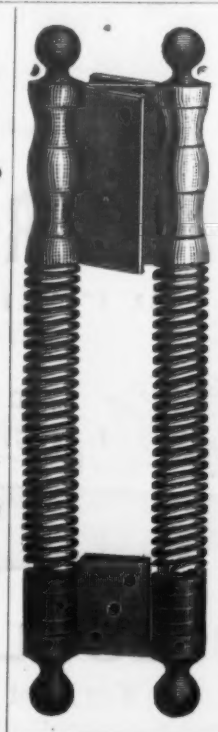

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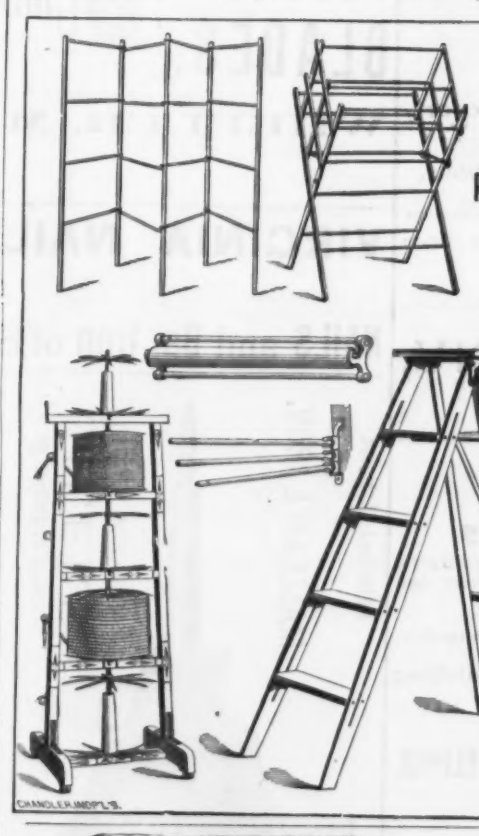

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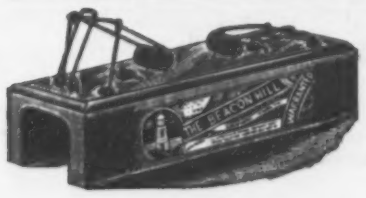

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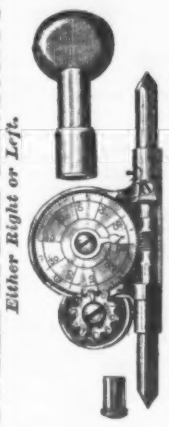

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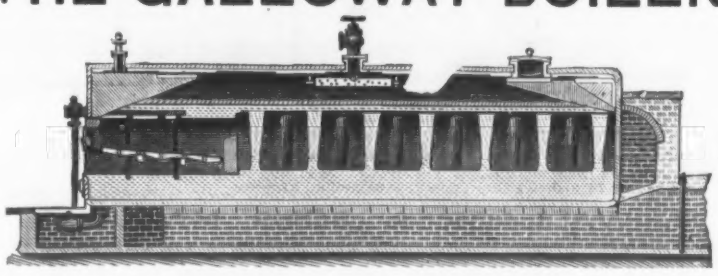

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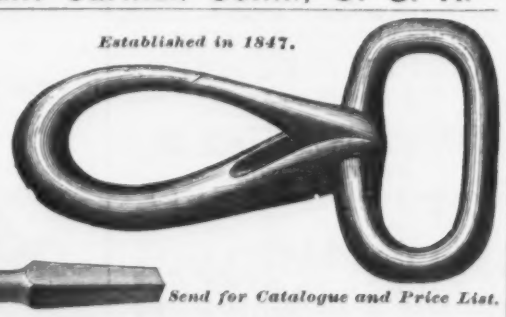

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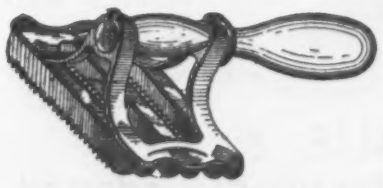

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"THE DETECTIVE Burglar Alarm."
Patented in this and other Countries
May be applied to any door or window in a few seconds. When the door is opened or the window raised the Alarm falls to the floor, exploding a No. 32 blank cartridge.
Packed complete with four cartridges, weight 6 ounces.
Endorsed by Hon. Wm. B Smith, Mayor of Philadelphia, and Gen. James A. Stewart, Chief of Police.
Having improved the Alarm and are now manufacturing them in large quantities, we are prepared to quote lower prices than heretofore—viz., $1.80 per dozen, or $18.00 per gross; no charge for boxing or cartage.
Sample sent by mail on receipt of six cents. We furnish handsome gilt signs and frames with every order.
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More popular than any Powder now in use.
BLASTING POWDER and ELECTRICAL BLASTING APPARATUS. MILITARY POWDER on hand and made to order.
*Safety Fuse, Frictional and Platinum Fuses.*
Pamphlets showing sizes of grain sent free.

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*100,000* in use throughout the United States is proof of their superiority over other TORCHES.
Write for prices and circular.
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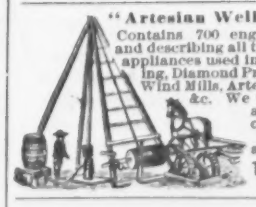

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For Net Bottom Prices see Page Adv. *Iron Age*, AUGUST 5th.

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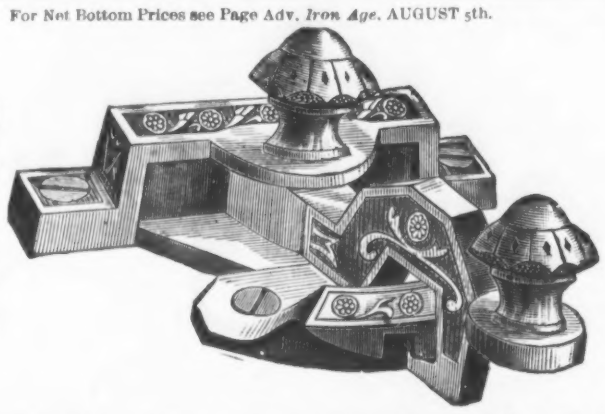
Patented Oct. 7th, 1879.
FOR NET BOTTOM PRICES SEE PAGE AD. IN IRON AGE, AUGUST 5th.



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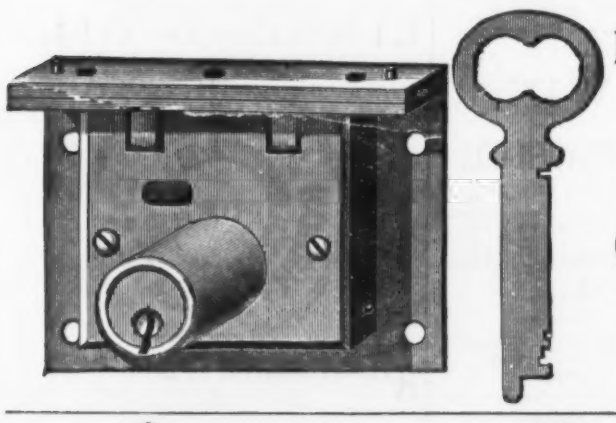

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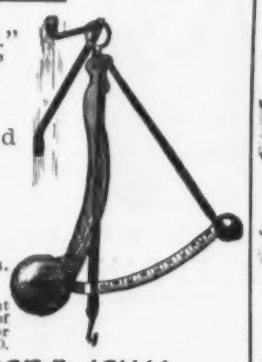

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*11,000,000 Sold to Replace Various Other Kinds.*
*Twenty-Five Per Cent. More Sugar and a Better Quality*

SPOUT No. 1.
Actual size, with heavy Wire Hanger, that does not break like Hangers cast on a spout.

than from any others, is the verdict of over **20,000** Maple Sugar Makers who use them. Their perfect working with satisfaction is guaranteed.

Agents wanted in every Maple Sugar Town. **Descriptive Circulars, with Price Lists and Sample Spouts, sent free to the U. S. trade.** Owing to the unusually heavy orders at this season of the year, it is necessary that all Agents (and those desiring agencies) forward their orders for the coming **sugar season as early as possible**, to give the required time for supplying **all demands**, and that shipments by freight can be made so as to reach their destination in due season. **In ordering state distinctly whether to ship by freight or by express.** Write immediately for Agency to

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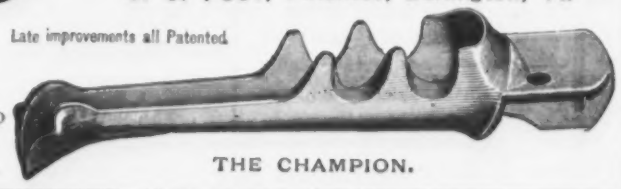
SELL **Eurekas** ONLY; THEN YOU AND YOUR CUSTOMERS ARE MADE HAPPY.

Late improvements all Patented.



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Holds a Drill With the Grip of a Giant. All Steel.
Parts Interchangeable
*SIMPLE IN CONSTRUCTION.*
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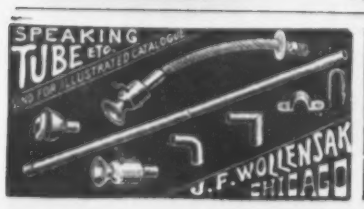

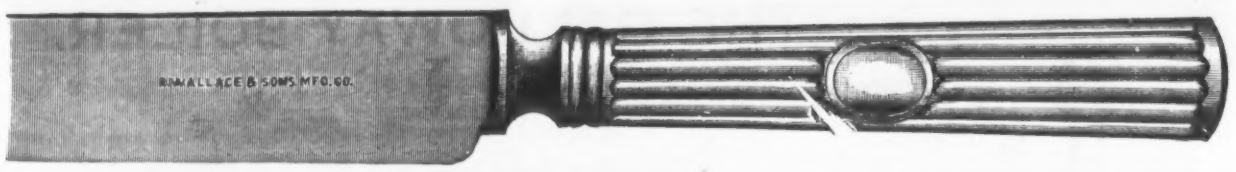


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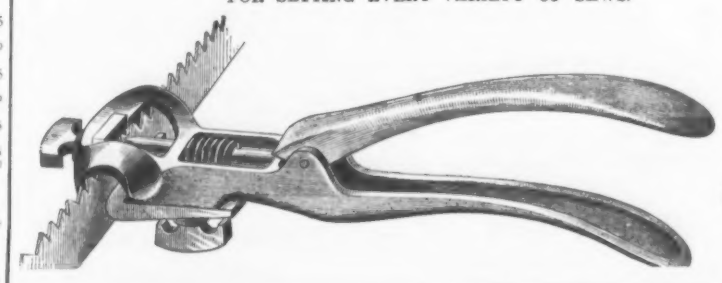

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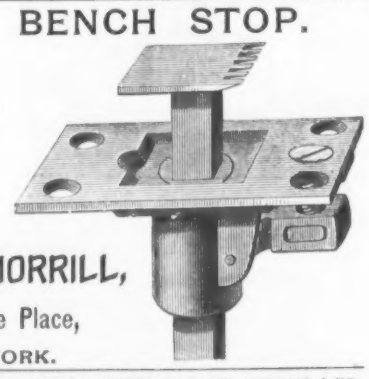

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FINE
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**Shooting Gallery Rifle**
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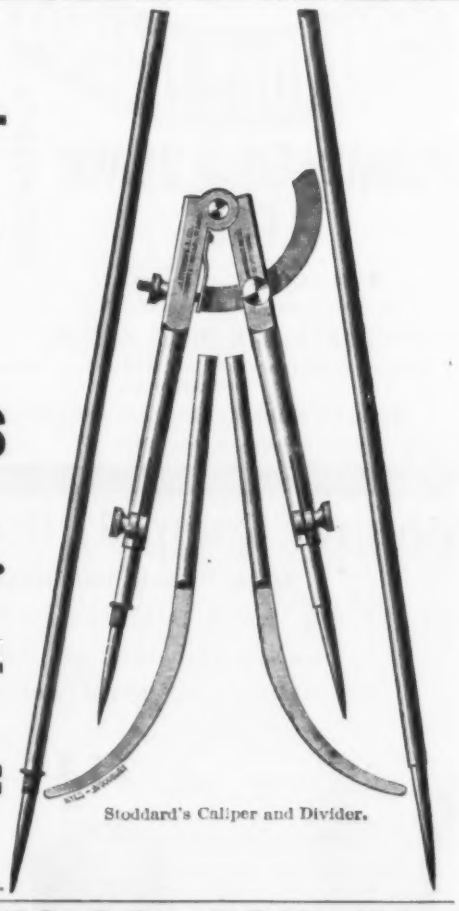

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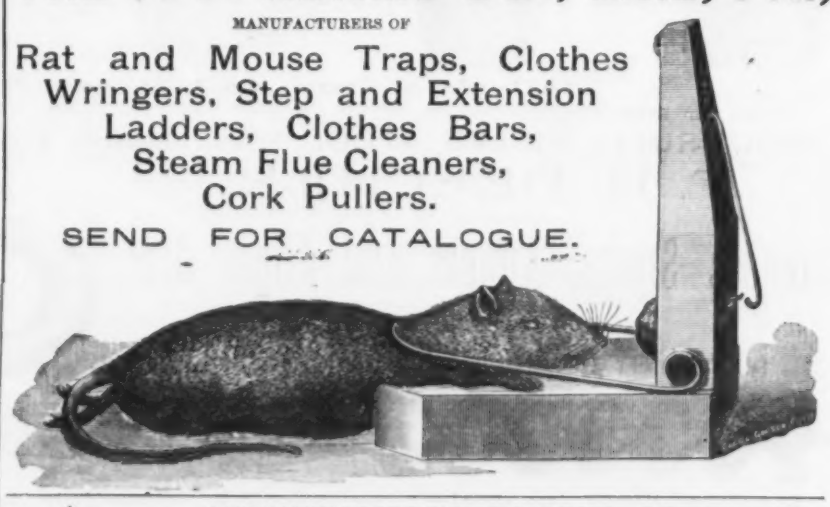

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## SOLE LEATHER POLICE CLUBS.
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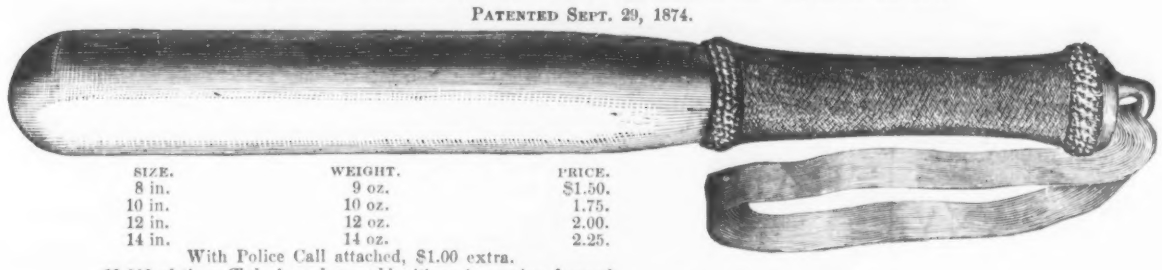

| SIZE. | WEIGHT. | PRICE. |
|---|---|---|
| 8 in. | 9 oz. | $1.50. |
| 10 in. | 10 oz. | 1.75. |
| 12 in. | 12 oz. | 2.00. |
| 14 in. | 14 oz. | 2.25. |

With Police Call attached, $1.00 extra.
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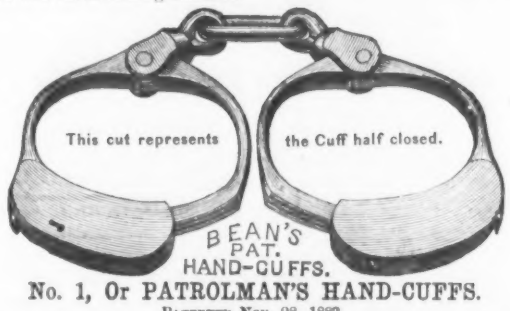
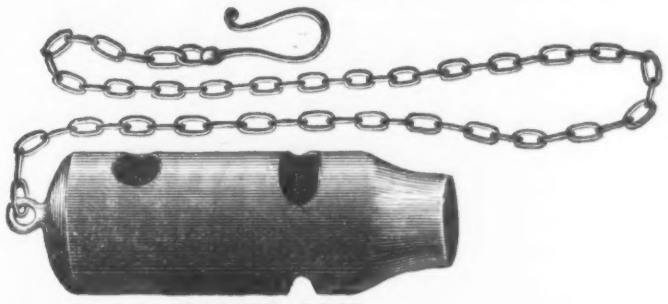
PATENTED NOV. 28, 1882.
Weight, 17 ozs.
PRICES:—NICKEL PLATED, $4.75. POLISHED, $4.00.




No. 1, Or PATROLMAN'S HAND-CUFFS.
PATENTED NOV. 28, 1882.
Weight, 14 ozs. NICKEL PLATED, $4.75. POLISHED, $4.00.



POLICE CALL.
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SINGLE HAND-CUFF, WITH LOOP.
For Conveying a Prisoner aboard a railroad train.
Weight, 8 ozs. PRICE, $3.50.

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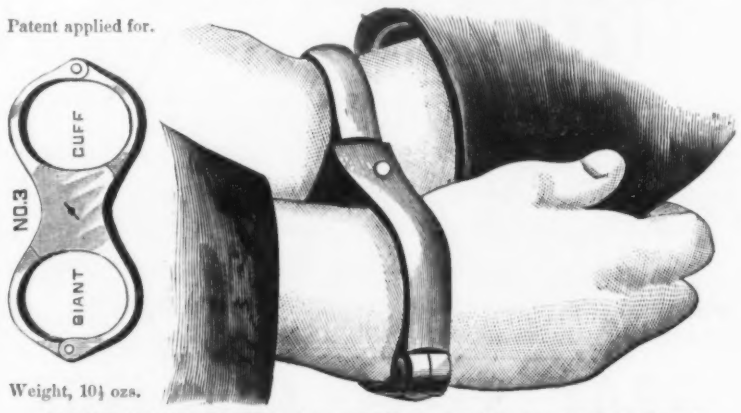


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GIANT HAND-CUFFS, AS THEY APPEAR ON THE WRISTS.
PRICES:—Plated, with Pocket, $6.50. Plated, without Pocket, $6.00.
Impossible for the Prisoner to remove them from his wrist either with or without the key.

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SEE PAGE 3.

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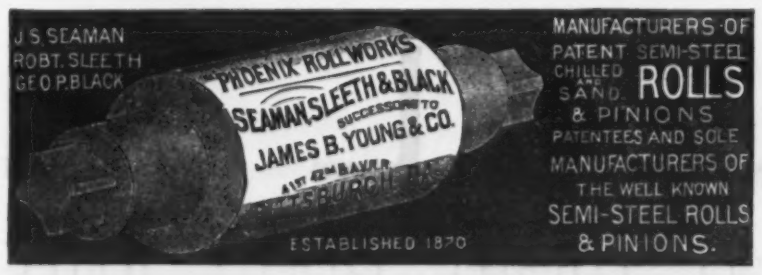


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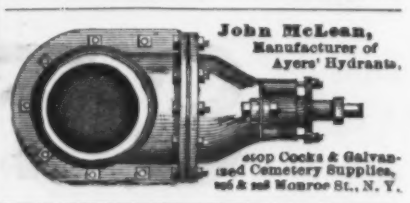

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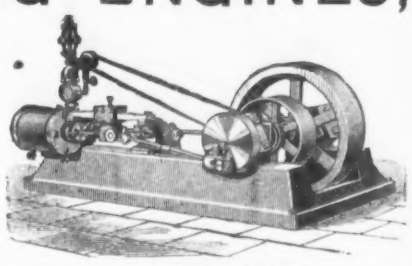
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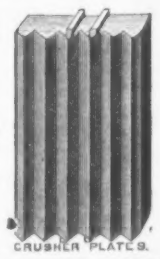

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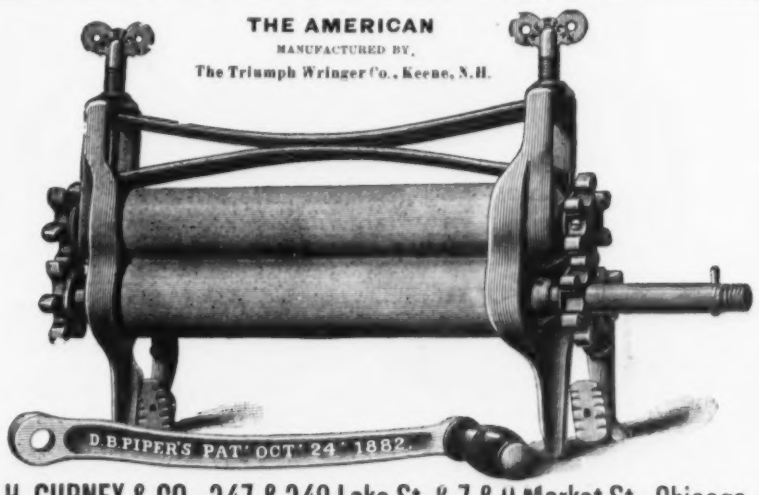

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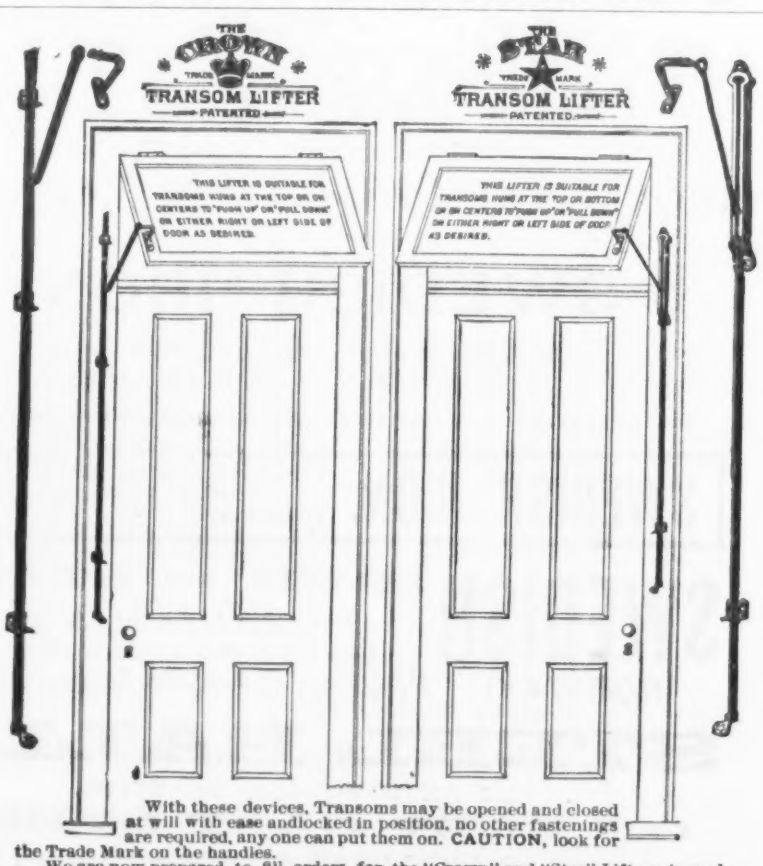


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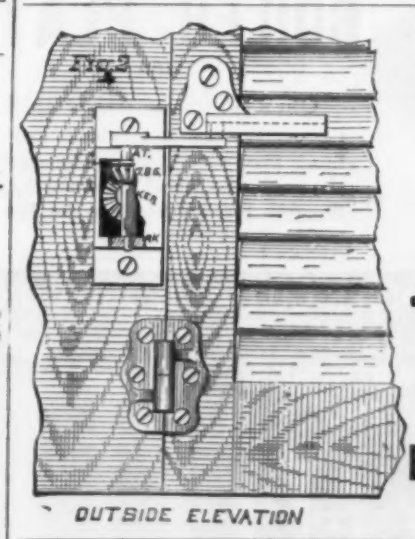


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The annexed cut shows one of the many styles of Coffee Mills of our manufacture, especially adapted to Grocers' use and all retailers of coffee. They are highly ornamental, and workmanship of the very best. We make more than 30 styles.

ALSO, LANE'S PORTABLE COFFEE ROASTER.

Will roast 30 to 40 lbs. at once, and can be used as a stove at other times. Send for descriptive list to Manufacturers,

LANE BROS., Poughkeepsie, N. Y.

Also Sold by Leading Wholesale Houses.

Our agents, John H. Graham & Co., 113 Chambers St., New York carry a full line of our goods, and will be pleased to serve you at factory prices.

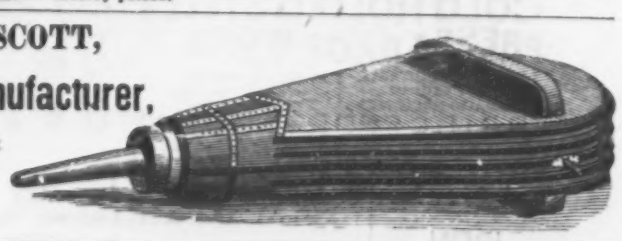
GEO. M. SCOTT,

Bellows Manufacturer,

Johnson Street

Cor. 22d St.,

CHICAGO, ILL.



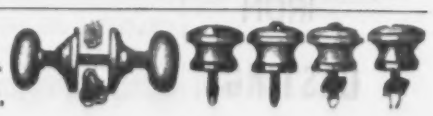
J. E. QUACKENBUSH & SON,

MANUFACTURERS OF

Porcelain, Mineral & Jet Knobs & Escutcheons.

Send for Price List and Terms.

Office and Salesrooms: 813 & 815 W. 57th St., N. Y.



# PHILADELPHIA.

*Lloyd & Supplee Hardware Co.*
Terms, 30 days. For 60 or 90 days, interest added at 8 per cent. per annum.

**Anvils.**
Peter Wright's, ℔ ℔ ........9½@9¾¢
Trenton........9¼¢
Eagle Anvils, American, 10¢........dis. 20 %

**Axes.**
Hunt's Kentucky and Yankee, ℔ doz. net.......$7.00
William Mann, ℔ doz. net .........$6.50 @ 7.00
Favorite ℔ doz. net........6.00
Beveled Axes........add 50¢
Double Bit Axes, net .........$12.00 @ 13.00
Loveland Axes........7.00

**Augers and Auger Bits.**—New List January 7, 1880.
Snell's Augers and Bits........dis. 60@60&5 %
New Haven Copper Company........dis. 60&10 %
Benjamin Pierce Auger Bits........dis. 40 %
Jennings' Auger Bits, new list Jan. 1, 1884..dis.. 25 %
Cook's Auger Bits and Augers........dis 55 %
Snell's Ship Augers........dis 15 @ 20 %
Watrous' Ship Augers........dis 15 @ 20 %
Bonney'sPat. Hol. Augers, list $48 ℔doz dis...40&10 %
Stearns' Pat. Hol. Augers, list $48 ℔ doz...dis 30&10 %

**Balances.**
Light and Common........dis. 50 %

**Bells.**
Bevin Bros. Mfg. Co. Light Hand Bells dis,75@75&10 %
Light Hand Bells........dis 75&10@75&10&5 %
Swiss Pattern Hand Bells........60 %
Connell's Door Bells........dis. 20&10 %
Gt. Western & Kentucky Cow,newlist.dis. 70@70&10 %

**Boring Machines**
Upright, without Augers.....List, $5.50 } ......dis. 50 %
Angular, without Augers.....List, 6.75 }

**Bolts.**—Eastern Carriage Bolts, new list, June 10, 1884........dis 75 %
Phila. Carriage Bolts new list..dis 75&10@75&10&5 %
Stanley, Wrought Shutter........dis. 60&10 %

**Braces.**—Barber's Improved........dis 50 %
Barber's Old Style........50&10 %
Backus, Polished........dis 60&10@60&10&5 %
Backus, Nickeled........dis. 60@60&10 %
Spofford........dis 50&5@50&10 %
American Ball........dis. 55&10 %
Amidon Improved........dis. 60@60&10&5 %
Amidon Corner Brace........dis. 40@40&10 %

**Butts.**
Cast Fast Joint, Narrow........dis 60&5 @ 60&10&5 %
Cast Fast Joint, Broad ........dis 60&5 @ 60&10&5 %
Cast Loose Joint, Narrow........ }
Cast Loose Joint, Broad........ }
Cast Acorn, Loose Pin........ } dis 70& 10 @ 75 %
Cast Acorn, Japanned........ }
Cast Mayer's Loose Joint........ }
Wrought Loose Pin........dis 65&5 %
Wrought Table Hinges and Back Flaps........dis 65 %
Wrought Loose Joint........dis 65&5 %
Wrought Narrow Fast........dis 65 %

**Blind Butts.**
Parker........dis. 75&2 %
Clark........dis. 80&5 @ 80&10 %
Shepard........dis. 75&10&5 @ 80 %
Lull & Porter........dis. 80 %
Huffer's........dis. 50 %

**Casters.**—Bed (new list July 8, 1886) Plate....dis 50 &10@60 %

**Chains.**—German Halter and Coil, list June, 1884 ........dis. 55 @ 60
Galvanized Pump........℔ ℔ 5¼@5¾¢
Best Proof Coil Chain—English.
℔ ℔........ 9¼ 6¾ 5¾ 5¼ 5 4¾
3-16 ¼ 5-16 ⅜ 7-16 ½

**Chisels.**—Socket Framing........dis 75@75&5 %
Socket Firmer........dis 75@75&5 %
Butcher's........$5.00@$5.25 to £ gold

**Coffee Mills.**—Box and Side (new list Jan. 1, 1880........dis 45&10 %
Enterprise........dis 20&10@30 %

**Cutlery.**—Walden Pocket........new list net
Pennsylvania Knife Co........new list net
Landers, Frary & Clark, J. Russell & Co., Lamson & Goodnow Mfg. Co. and Meriden Cutlery Co., Manufacturers' prices net.

**Door Hangers.**—Cronk Barn Door Hangers...No. 4, $12.00; No. 5, $14.00, No. 6, $18.00 dis. 50&10@50&15 %
American Parlor Door Hanger ....$6.00; dis 20&10 %

**Drawing Knives.**
Hart Mfg. Co. s........dis. 75@75&5 %
Adjustable Handle........dis 20@25 %

**Files.**
Nicholson ........dis 60&5@60&10 %
Disston........dis 60&10@60&10&10 %
Butcher........
Crown and Arrow ........60&10&10@70 %

**Fluting Machines.**
Eagle—3½ in. roll........each, $2.15 } dis 35 %
Eagle—5½ in. roll........each, 2.85 }
Crown—4½ in. roll........each, 3.50 }
Crown—6 in. roll........each, 4.00 } dis 35 %
Crown—8 in. roll........each, 6.50 }
Geneva Fluter........dis 25 %
Favorite com. Fluter and Sad Iron..℔ doz., $10.50 net

**Fry Pans.**
Burnished........dis 70&10 %

| ℔ doz.... | $3.00 | 3.75 | 4.25 | 4.75 | 5.25 | 6.00 | 7.00 | 8.00 | 9.00 |
|---|---|---|---|---|---|---|---|---|---|
| No.... | 0 | 1 | 2 | 3 | 4 | 5 | 6 | | 8 |

**Hammers.**
Yerkes & Plumb's, new list........dis 40&5 %
Maydole Hammers, new list........dis 25@25&10 %
Howell A. E. Nail Hammers........℔ doz., net $3.75

**Handles.**
Disston Loop Handles Cross-Cut........20¢ pair net
Boynton Loop Handles Cross-Cut........20¢ pair net

**Hatchets.**
Yerkes & Plumb, new list ........dis 40&5 %
Hunt........dis 40 @ 40&5 %

**Hay and Straw Knives.**
Lightning........℔ doz., $18.00 dis. 25 %
Electric........℔ doz., $9.50 @ 10.50
Wadsworth........℔ doz., net d's 40@40&5 %
Walton Straw Knives........℔ doz., net 17.00
Gem Hay Knife........℔ doz $12.50@13.50

**Hinges.**
Strap and T........dis 65&5 %

**Horse Nails.**

| | Nos. 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|
| Globe........ | 26 | 23 | 21 | 20 | 19 | 18 | dis 10&5&5 % |
| Ausable........ | 30 | 27 | 25 | 24 | 23 | 22 | dis 25&10 % |
| " Pol'ed and P't'd & Blued & P't'd. | 31 | 28 | 26 | 25 | 24 | 23 | dis 25&10 % |
| Clinton........ | 23 | 21 | 20 | 19 | 18 | | dis 25&10 % |
| " Pol'ed & P't'd. | 24 | 22 | 21 | 20 | 19 | | dis 25&10 % |
| Saranac........ | 26 | 23 | 21 | 20 | 19 | 18 | ..dis 25@30 % |

**Locks and Knobs.**
Branford Locks........dis 45&2 %
Parker's Cabinet........dis 40&2 %
American Padlocks........dis 75@75&5 %
Scandinavian Padlocks........dis 50 %

| ℔ doz.. | $5.00 | 5.50 | 6.50 | 7.50 | 8.50 | 10.00 | 12.50 | dis 60 % |
|---|---|---|---|---|---|---|---|---|
| No..... | 57 | 58 | 59 | 60 | 61 | 62 | 63 | |
| ℔ doz.... | | $18.00 | | 26.00 | | 33.00 | | dis 60 % |
| No........ | | 64 | | 65 | | 66 | | |

**Lanterns.**
Buckeye........large list, net; small list, net
Tubular, No. 0, $6.75@7.00; No. 1, $8.25@8.50 ℔ doz. net
Guards 40¢ extra.

**Lawn Mowers.**—Pennsylvania........ }
Philadelphia........ }
Excelsior........ } dis 50 %
Continental........ }
Quaker City........ }

**Lawn and Garden Pumps.**
Holland Patent........list, $5.00, dis 10 %

**Mattocks.**
Long and Short Cutter........new list, 60&5 %
Pennsylvania Pattern........dis 60& 5 %

**Molasses Gates.**
Enterprise Mfg. Co.'s Measuring Faucets.dis. 20&10 %
Stebbins' Gates........dis. 70&10 @ 75&5 %
Lincoln's Gates........dis. 60@60&10 %
Landers, Frary & Clark's Petroleum........dis 40&10 %
Brass Liquor Cocks new list Jan. 1, 1880.dis. 55&10 %
Cork Lined Cocks........dis. 70 %

**Meat Cutters.**
Dixon's........dis. 45 %
Woodruff........dis. 45 %
Stowe........dis. 45 %
Hale's........dis. 70@70&5 %
American........dis 30 %
Stuffers........dis. 40 %
Enterprise Stuffers........dis. 30 %

**Parers, Apple and Peach.**
Ideal Apple Parers........per doz $5.00
Waverly Apple Parers........per doz $4.50
Goodell White Mountain Apple Parers per doz $5.00
Goodell Lightning Apple Parers........per doz $6.00
Monarch Peach Parers........per doz $15.00 dis 10 %

**Planes.**—Sandusky Tool Co........dis. 20&2 %
Ogontz........dis. 25&2 %
Ohio and Auburn........dis. 20&2 %
Bailey (S. R. & L. Co.)........dis. 20&10 %

**Plane Irons.**—Ohio Tool Co........dis. 20&10 %
Butcher's........$5.00 @ 5.25 to £

**Plumbs and Levels.**
Stanley's Adjustable........dis. 70&10 %
Stanley's Non-Adjustable........dis. 70&10 %

**Picks.**—New list........60&5@60&10 %

**Razor Strops.**
Lamont Combination........℔ doz. $4.00
Lamont Combination........1 gross lots $42.00
Imitation Emerson........℔ doz.$2.00, 70&10&10 %

**Rules.**—Stanley Boxwood........dis. 80&5@80&10 %
Stanley Ivory........dis. 50 @50&10 %

**Steelyards.**—Hart's Pattern........dis40&10@53&5 %

| Per doz...... | $14.50 | 17.75 | 21.00 | 26.50 | 31.00 | 35.50 |
|---|---|---|---|---|---|---|
| Lbs........ | 50 | 100 | 150 | 200 | 250 | 300 |

American Pattern........dis. 40&10@50 %

| Per doz...... | $8.00 | 10.25 | 13.75 | 15.00 | 16.75 | 19.50 |
|---|---|---|---|---|---|---|
| Lbs........ | 50 | 100 | 150 | 200 | 250 | 300 |

Scale Beams........60&5@60&10 %
Custer's........30@33⅓ %

**Squares.**
Steel and Iron.dis. 60&10 %; full cases dis........70&10@70&10&10 %
Try Squares, Stanley........dis 60&10 %
Disston's Try Squares........dis 45&10 %

**Scythes.**—Golden Clipper, Damascus Blade, Boxed and Sharpened........℔ doz $7.00 net
Clipper No. 10, Bronzed Blade, Boxed and Sharpened........℔ doz $6.70 net

**Saws.**—Disston's Hand, Panel and Rip....dis 20&10 %
Disston's Circular........dis 45&10 %
Cross-Cut No. 2, Plain Tooth........dis 45&10 %
Cross-Cut Patent Tooth........dis 45&10 %
Cross-Cut Champion Tooth........dis 45&10 %

**Shovels and Spades.**
Oliver Ames & Sons, new list........dis 20 %
Griffiths, C. S........dis 50&10 %
Rowland........dis 60@60&10 %

**Sad Irons.**—4 to 10 ℔........℔ ℔ 2.35@2.50¢
Mrs. Potts' Patent........dis 35@40 %

**Stone.**
Washita Extra........℔ ℔ 30¢
Washita No. 1........℔ ℔ 25¢
Washita No. 2........℔ ℔ 20¢
Washita Slips........℔ ℔ 50¢
Washita Axe........℔ ℔ 15¢
Hindostan Oil Stone No. 1........℔ ℔ 4½ %
Hindostan Axe Stone........℔ ℔ 5¢
Hindostan Slips........℔ ℔ 8¢

**Screws.**—Parker list (new list).
Flat Head Iron........dis 80 %
Flat Head Brass........dis 75 %
Round Head Brass........dis 70 %
Round Head Iron........dis 75 %

**Spoons.**
Plated........dis 50&10@60 %
German Silver........dis 50 @ 50&5 %
Britannia, Boardman's........dis 60 %
Britannia, Parker's........dis 60&10@60&10&10 %
Tinned........dis 10 %

**Springs.**—Torrey........dis 50 %
Gem No. 3 small Japanned........$2.00 } dis 50&10 %
Gem No. 2 medium Japanned........2.75 }
Coil No. 10 ℔ gross net........$5.50@6.00
Other Standard Springs........dis 50&10@60 %
Warner Door Springs, ℔ doz. $2.50..dis 40&10 @ 50 %
Standard Spring Hinges—
Single No. 0, ℔ doz. net........$1.10@1.25
Single No. 1, ℔ doz. net........1.25@1.50
Other Standard Spring Hinges......dis 25&10@40 %

**Stocks and Dies.**........dis 30&10@40 %

**Stove Polish.**—Gem........℔ gross, $4.50, dis 10 %
Dixon........6.00, dis 10 %
Fire Fly........$3.00 gross, net

**Tacks.**........Combination discounts
Shoe Nails—4-8, and over, 5½¢........ } 10 %
Shoe Nails—3½-8, and under 7¢........ }
Double Pointed Tacks........dis 80@80&10 %

**Traps.**
Genuine Oneida—Newhouse........dis 35@40 %
Im. Oneida—Newhouse list. First qual.dis 60&10@10 %

**Vises.**—Solid Box. Trenton new list...dis 60@60&5 %

**Wrenches.**—Agricultural......dis 80&10@80&10&5 %
Coes' Genuine........dis 60&3 %
Coes' Mechanics'........dis 60&10&3 %
Coes' Mechanics,' Mall. Bar........dis 80&10 %

**Wire.**
Bright or Annealed, No. 0 to 18......dis 72½&5@75 %
Bright or Annealed, No. 19 to 26........dis65&10 %
Bright or Annealed, No. 27 to 36.....dis 70@72½&5 %
Coppered, 0 to 18........dis 70 %
Tinned Broom Wire........dis 60&5 %
Galvanized Barb Wire........4¾¢
Painted Barb Wire........4¼¢
Galvanized, Nos. 7 to 18...Market List, dis....65&5 %

**Wringers.** Per doz. (net, dis2 % cash in 10 days.)

| | Per doz. |
|---|---|
| Peerless No. 2½........ | 27.00 |
| Peerless No. 3½........ | 31.50 |
| Universal, No. 2½........ | 27.00 |
| Universal, No. 2........ | 30.00 |
| Universal, No. 1¼........ | 31.50 |
| Universal, No. 1½........ | 36.00 |
| Universal, No. 1........ | 54.00 |
| Universal, for Set Tubs, A 2½........ | 36.00 |
| Universal, for Set Tubs, E 1½........ | 45.00 |
| Universal, for Set Tubs, C 1........ | 63.00 |
| Novelty, for Common Tubs, No. 2 & 2½, 10 in | 27.00 |
| Novelty, for Common Tubs, No. 3 & 3½, 11-in | 31.50 |
| Excelsior, for Stationary Tubs, No. E, 10-inch | 36.00 |
| Excelsior, for Stationary Tubs, No F, 11-inch | 40.50 |
| Excelsior, with Folding Bench, No. A, 10-inch | 45.00 |
| Excelsior, with Folding Bench, No. B, 11-inch | 49.50 |

# PITTSBURGH.

## Merchant Iron.

TERMS.—Note or acceptance at 60 days, with current rate of exchange on New York, or a discount of 2 ℔ cent. for cash if remitted within 10 days from date of invoice.

***For fluctuations and discounts on card rates see weekly Pittsburgh Trade Report.***

The following are card rates.

*Flat Bar.*
1¼ to 4 by ⅜ to 1 .....2.0¢ | 1¼ and 1⅜ by ⅜ to ¾. 2.1¢
4¼ to 6 by ⅜ to 1........2.1¢ | 1 and 1⅛ by ⅜ to ¾.....2.2¢
1⅛ to 6 by 1⅛ to 1⅝.....2.4¢ | ⅝, ¾ and ⅞ by ⅜ to ⅝.2.4¢

*Rounds and Squares.*
1 to 1⅞.....2.0¢ | 4⅛ to 5.......3.5¢ | ⅝........2.6¢
2 to 2⅞.....2.2¢ | ⅝ to ¾ ....2.1¢ | 5-16........2.8¢
2⅞ to 3¾.....2.5¢ | ⅜ to 9-16.....2.2¢ | ¼........3.0¢
3⅞ to 4 .....3.0¢ | ½ to 7-16.....2.4¢ | 3-16........5.0¢

*Oval Iron.*
⅜ to 1⅜........2.4¢ | ½........2.8¢
⅜ to ⅜........2.6¢ | ⅜........3.2¢

*Half Oval and Half Round.*
⅜ to 1¼ inch........2.7¢ | ½ inch........3.5¢
⅜ to ⅜ "........3.2¢ | ⅜ "........5.0¢

*Horse Shoe.*
⅜ to 1⅛ by 5-16 to ⅞ inch........3.0¢

*Wagon Box Iron.*
⅜ inch, Nos. 13 & 14...3.2¢ | ⅜ inch, Nos. 11 & 12...3.3¢
⅜ " " 11 & 12...3.0¢ | ⅜ " " 13 & 14...3.9¢
⅜ " " 13 & 14...3.5¢ | ⅜ " " 11 & 12...3.6¢

*Heavy Bands.*
3⅛ to 6 by ¼ & 5-16..2.2¢ | ⅜ to ⅞ by ¼ & 5-16..2.5¢
1⅝ to 3⅛ by ¼ & 5-16..2.2¢ | ⅝ & ⅝ by ¼ & 5 16....3.0¢
1 to 1⅝ by ¼ & 5-16..2.3¢

*Light Bands.*
1⅛ to 6 by ⅛ to 3-16....2.5¢ | ⅜ & 11-16 by ⅛ to 3-16.3.2¢
1⅛ to 6 by Nos. 11 & 12.2.6¢ | ⅜ & 11-16 by Nos.11, 12.3.3¢
1 to 1⅜ by ⅛ to 3-16....2.6¢ | ⅝ & 9-16 by ⅛ to 3-16..3.5¢
1 to 1⅜ by Nos. 11 & 12.2.7¢ | ⅝ & 9-16 by Nos.11,12.3.6¢
¾ & 12-16 by ⅛ to 3-16.2.9¢ | ⅜ inch by ⅛ & 3-16.....3.8¢
¾ & 13-16 by Nos.11,12.3.0¢ | ⅜ in. by Nos. 11 & 12..3.9¢

*Hoop Iron.*
1⅛ to 4, Nos. 13, 14, 15.2.8¢ | ⅝, Nos. 19 and 20.....3.7¢
1⅛ to 2, Nos. 16, 17, 18.2.9¢ | ⅝, No. 21........3.8¢
1⅛ to 2, No. 19........3.0¢ | ⅝, No. 22........3.9¢
1⅛ to 2, No. 20........3.1¢ | 11-16, Nos. 13, 14 & 15.3.7¢
1⅛ to 2, No. 21........3.2¢ | 11-16, Nos. 16, 17 & 18.3.8¢
1⅛ to 2, No. 22........3.3¢ | 11-16, Nos. 19 and 20..3.9¢
15-16, 1 & 1⅛, Nos. 13, 14 & 15........3.0¢ | 11-16, No. 21........4.0¢
15-16, 1 & 1⅛, Nos. 16, 17 & 18........3.1¢ | 11-16, No. 22........4.1¢
15-16, 1 & 1⅛, Nos. 19 & 20........3.2¢ | ⅝, Nos. 13, 14 and 15..3.9¢
15-16, 1 & 1⅛, No. 21...3.3¢ | ⅝, Nos. 16, 17 and 18..4.0¢
15-16, 1 & 1⅛, No. 22...3.4¢ | ⅝, Nos. 19 and 20........4.1¢
⅞, Nos. 13, 14 and 15..3.2¢ | ⅝, No. 21........4.2¢
⅞, Nos. 16, 17 and 18..3.3¢ | ⅝, No. 22........4.3¢
⅞, Nos. 19 and 20......3.4¢ | ⅝, No. 23........4.4¢
⅞, No. 21........3.5¢ | 9-16, Nos. 13, 14 & 15..4.1¢
⅞, No. 22........3.6¢ | 9-16, Nos. 16, 17 & 18..4.2¢
13-16, Nos. 13, 14 & 15..3.4¢ | 9-16, Nos. 19 and 20......4.3¢
13-16, Nos. 16, 17 & 18..3.5¢ | 9-16, No. 21........4.4¢
13-16, Nos. 19 and 20...3.6¢ | 9-16, No. 22........4.5¢
13-16, No. 21........3.7¢ | 9-16, No. 23........4.6¢
13-16, No. 22........3.8¢ | ½ inch, Nos. 13, 14, 15.4.3¢
¾, Nos. 13, 14 and 15..3.6¢ | ½ inch, Nos. 16, 17, 18.4.4¢
¾, Nos. 16, 17 and 18..3.6¢ | ½ inch, Nos. 19 & 20.....4.6¢
 | ½ inch, No. 21........4.7¢
 | ½ inch, No. 22........4.8¢
 | ½ inch, No. 23........4.9¢

The prices under Hoop do not apply to Cotton Ties. 1-10¢ ℔ ℔ extra will be charged for each gauge lighter than the lightest indicated.

1-10¢ ℔ ℔ extra will be charged for cutting Hoops to specified lengths

*Barrel Hoops.*
1¼ to 2 in., cut to length.
9 to 11 ℔, ℔ set of 6 hoops........3.0¢
8 ℔ and less than 9 ℔, ℔ set of 6 hoops........3.1¢
Less than — ℔, ℔ set of 6 hoops........3.2¢

Extras for cutting to length all preceding Iron, including Tire........1.10

*Tank Iron.*
No. 9 & heavier, 2.8¢; Plow Slabs, 3.0¢; Plow Wings, 3.3¢

*Sheet Iron.*

| | Common. | Charcoal. | Juniata. |
|---|---|---|---|
| Nos. 10 to 14........ | 3.0¢ | 4.5¢ | 6.0¢ |
| Nos. 15 to 17........ | 3.3¢ | 4.8¢ | 6.3¢ |
| Nos. 18 to 21........ | 3.6¢ | 5.1¢ | 6.6¢ |
| Nos. 22 to 24........ | 3.8¢ | 5.3¢ | 6.8¢ |
| Nos. 25 and 26........ | 4.0¢ | 5.5¢ | 7.0¢ |
| No. 27........ | 4.2¢ | 5.7¢ | 7.2¢ |
| No. 28........ | 4.6¢ | 6.1¢ | 7.6¢ |

All sheets No. 18 and lighter, over 30 inches wide, not less than 2.10¢ extra.

*Wood's Patent Planished Sheet.*
1st quality (A)........10¢ | 2d quality (B)........9¢

*American Galvanized Sheets.*
(Sono C. H. B.) Brand. Patent Leveled:
Nos. 14 to 20........12¢ | No. 27........15¢
Nos. 21 to 24........13¢ | No. 28........16¢
Nos. 25 and 26........14¢ | No. 29........18¢
60 @ 62½ % discount.

*Coal Screen Iron.*
1⅜ by ⅜ by 5-16........2.5¢ | 1 by ⅜ by 5-16........3.0¢

*Angle Iron.*
2¼, 3, 3¼ and 4 inch...2.8¢ | 1⅛ by 1, for Pl. Hand..3.3¢
1½, 1¾, 2 and 2¼ "...2.8¢ | 1⅛ by ⅜ " "..3.3¢
1¼ inch........2.9¢ | 1⅛ by ⅜ " "..3.4¢
1 "........3.1¢

*T Rail.*
8 ℔ to the yard........2.4¢ | 20 ℔ to the yard........2.3¢
12 " "........2.3¢ | 28 " "........2.3¢
16 " "........2.3¢ | 30 " "........2.3¢

Splice Joints for 12, 16 and 20 ℔ Rail, 30¢ each; 28 and 30 ℔ Rail, 40¢ each: 40 ℔, 50¢ each.
3¼ by ⅜ and ½ Spikes for 20 and 28 ℔ Rail........3¼¢
2¼ and 3 by ⅜ " " 12 and 16 ℔ "........3.5¢
2¼ by 5-16 " " 8 ℔ Rail........4.0¢

*Flat Rails.*—Punched and Countersunk.
1¼ to 2 by ½ to ⅝ inch........2.5¢
1¼ by ⅜ and 7-16 inch........2.7¢
1¼ by ⅜, 7-16 and ½ inch........3.0¢

Juniata Nail Rods, 6.0¢; Norway Nail Rods, 7.5¢.
Guard Iron, ¼x⅜x⅜ and ⅜x⅝x⅜........3.5¢
Guard Iron ⅜x⅝x9-16 and ⅜x⅝x⅝........3.7¢
Drag Bars........2.8¢ | Cyl. & Landside Iron..3.7¢
Dropper Bars ........3.3¢ | Plow Beam Iron........3.5¢

**Nails.**
See Pittsburgh Trade Report.

**Tool Steel.**
*Classification Adopted April 13, 1886, Steel Association of United States.*

ROUND, SQUARE AND OCTAGON.
⅝ to 2...base, 8.0¢ | 6⅛ to 7........3.0¢ | ¼ & 9-32. 8.0¢
2⅛ to 3...ext. 1.0¢ | 7⅛ to 8........3.5¢ | 3-16........5.0¢
3⅛ to 4........1.5¢ | 9-16 to ½........0.5¢ | 5-32........10.0¢
4⅛ to 5........2.0¢ | 7-16 to ⅜........1.0¢ | ⅛........18.0¢
5⅛ to 6........2.5¢ | 5-16 and 11-32 2.0¢

FLATS.
2 to 9-16 inches wide x 2 to ⅝ inches thick...base, 8.0¢

*List of Extras ℔ ℔.*

| | | | |
|---|---|---|---|
| ⅛ x 3-16........ | 20.0¢ | 5-16 x ⅜ to ⅝........ | 1.5¢ |
| ⅛ x ¼........ | 15.0¢ | 5-16 x 11-16 to 8, ⅜ x 7-16 to 8........ | 1.0¢ |
| ⅛ x 5-16........ | 8.0¢ | 7-16 x ½ to 8........ | 1.0¢ |
| ⅛ x ⅜........ | 4.0¢ | ½ x 9-16 to 8, 9-16 x 2¼ to 8........ | 1.0¢ |
| ⅛ x 7-16 to ½........ | 3.0¢ | ⅝ to 2 in. x 2⅛ to 7........ | 1.0¢ |
| ⅛ x 9-16 to 7........ | 2.0¢ | ⅝ to 1¾ x 7⅛ to 8........ | 1.0¢ |
| ⅛ x 7⅛ to 8........ | 3.0¢ | 1¾ to 2 x 7⅛ to 8........ | 1.5¢ |
| 3-16 x ¼........ | 5.0¢ | 2⅛ to 3 x 2⅛ to 5........ | 1.0¢ |
| 3-16 x 5-16........ | 4.0¢ | 2⅛ to 3 x 5⅛ to 8........ | 1.5¢ |
| 3-16 x ⅜........ | 3.0¢ | 3⅛ to 4 x 3⅛ to 6........ | 1.5¢ |
| 3-16 x 7-16 to ⅝........ | 2.0¢ | 3⅛ to 4 x 6⅛ to 8........ | 2.0¢ |
| 3-16 x 11-16 to 2........ | 1.5¢ | 4⅛ to 5 x 4⅛ to 7........ | 2.0¢ |
| 3-16 x 2⅛ to 7........ | 1.0¢ | 4⅛ to 5 x 7⅛ to 8........ | 2.5¢ |
| 3-16 x 7⅛ to 8........ | 2.0¢ | 5⅛ to 6 x 5⅛ to 8........ | 2.5¢ |
| ¼ x 5-16 to ⅜........ | 2.0¢ | 6⅛ to 7 x 6⅛ to 7........ | 3.0¢ |
| ¼ x 7-16 to ⅝........ | 1.5¢ | 6⅛ to 8 x 7⅛ to 8........ | 3.5¢ |
| ¼ x 11-16 to 2........ | 1.5¢ | | |
| ¼ x 2⅛ to 7........ | 1.0¢ | | |
| ¼ x 7⅛ to 8........ | 2.0¢ | | |

Cutting to multiples or specified lengths, ½¢ ℔ ℔ for over 24 in.; under, according to contract.

**Crucible Steels.**

CRUCIBLE MACHINERY, ROUNDS AND SQUARES.
¾ to 3 inches....base, 5.0¢ | ⅜ to 7-16 in.....extra, 0.5¢
3⅛ to 4 in......extra, 0.5¢ | 5-16 and 11-32 in..ex., 1.0¢
4⅛ to 5 in......extra, 1.0¢ | ¼ and 9-32......extra, 1.5¢
5⅛ to 6 in......extra, 1.5¢ | 3-16 inch......extra, 3.0¢
½ to 11-16 in...extra, 0.2¢

Octagons, ½¢ extra throughout the list. Flats, one-half the extras of the Flat Tool Steel classification. Cutting to multiples or specified lengths, ½¢ per pound for anything over 24 inches long. For lengths 24 inches or less, according to to special contract.

CRUCIBLE SPRING STEEL, FLAT.
1¼ to 4 in. x No 4 gauge to ⅛ in. inc........base, 4.0¢
1 and 1⅛ in. x No. 1 gauge to 4 gauge inc...extra, 0.2¢
1 to 3 in. x No. 5 gauge to 7 gauge inc........extra, 0.5¢
¾ to 3 in. x No. 8 gauge to 10 gauge inc.....extra, 1.0¢
¾ to 3 in. x No. 11 gauge to 16 gauge inc....extra, 2.0¢
¾ to 3 in. x No. 17 gauge to 20 gauge inc....extra, 3.5¢
⅜ to ⅝ in. x No. 10 gauge to 16 gauge inc...extra, 4.0¢
⅜ to ⅝ in. x No. 17 gauge to 20 gauge inc...extra, 5.0¢
⅜ to ⅝ in. x No. 21 gauge to 24 gauge inc...extra, 6.0¢
Cut to length, 24 inches and over, ¼¢ per pound extra · and under, according to special contract.

ROUND AND SQUARE CRUCIBLE SPRING STEEL.
⅝ to 1½ inches..base, 5.0¢ | 5-16 in........extra, 1.0¢
½ to 9-16 in.....extra, 0.2¢ | ¼ in........extra, 1.5¢
⅜ to 7-16 in.....extra, 0.5¢

CRUCIBLE SHEET STEEL, TOOL GRADE.
To 21 gauge base, 9.0¢; 22 gauge, extra, 1.0¢; and 1¢ advance of extra for every No. of gauge to No. 26.
Spring Sheet Steel........base, 7¢
Common Sheet Steel........base, 6¢
Open-Hearth Shovel Sheet Steel........base, 4¢

CRUCIBLE CIRCULARS.
Diameter. | Diameter.
To 46 inch........base, 11¢ | 56 to 60 inch..extra, 5¢
48 inch........extra, 1¢ | 62 to 64 inch..extra, 7¢
50 inch........extra, 2¢ | 66 to 70 inch..extra, 9¢
52 to 54 inch..extra, 3¢ | 72 inch........extra, 11¢

**Bessemer and Open-Hearth Steels.**

MACHINERY ROUNDS AND SQUARES.
¾ to 3 in. inc.....base, 3.0¢ | ½ to 11-16 inch inc....0.2¢
Extra. | ⅜ to 7-16 inch inc.....0.3¢
3⅛ to 4 inches inc......0.3¢ | 5-16 and 11-32 in. inc..0.5¢
4⅛ to 6 inches inc......1.0¢ | ¼ and 9-32 inch inc....0.7¢
Machine cutting to specified lengths above 24 in..0.2¢
Machine cutting to specified lengths, 12 to 24 in...0.4¢
Machine cutting to specified lengths, less than 12 in., according to contract, but not less than 0.6¢ extra on each size. Shearing or sawing, one-half of the above extras for cutting.

MACHINERY FLATS
1¼ in. and wider x ⅜ to 1 in. thick........base, 3.0¢
1¼ in. and wider x ¼ to 5-16 in. thick........extra, 0.1¢
1¼ in. and wider x 3-16 and 7-32 in. thick...extra, 0.2¢
1¼ in. and wider x ⅛ and 5-32 in. thick.....extra, 0.3¢
¾ in. to 1⅛ in. x ¼ to 1 in. thick........extra, 0.2¢
¾ in. to 1⅛ in. x 3-16 and 7-32 in. thick.....extra, 0.3¢
¾ in. to 1⅛ in. x ⅛ and 5-32 in. thick........extra, 0.5¢
⅜ in. to ⅝ in. x ¼ to ½ in. thick........extra, 0.3¢
⅜ in. to ⅝ in. x 3-16 and 7-32 in. thick......extra, 0.5¢
⅜ in. to ⅝ in. x ⅛ and 5-32 in. thick........extra, 0.7¢
⅜ in. to 1⅛ in. x 1-16 and 3-32 in. thick.....extra, 2.0¢
1¼ in. to 3 in. x 1-16 and 3-32 in. thick........extra, 1.0¢
Sizes of flats not named in above list shall be one-half the extras of same size of Tool Steel.

TIRE STEEL, ROUND EDGES.
¼ inch and wider x ⅜ to 1 inch thick........base, 2.8¢
Extras same as Flat Machinery extras.

TIRE STEEL, SQUARE EDGES.
Throughout the list 0.2¢ more than for same sizes of Round Edge Tire.

TOE-CALK STEEL.
1¼ inches and wider x ⅜ to 1 inch thick.....base 2.9¢
Extras same as Machinery Extras.

SLEIGH-SHOE STEEL.
1¼ inches and wider x ⅜ to 1 inch thick.....base, 2.7¢
Extras same as Machinery Extras.

SPRING STEEL FLAT.
1¼ to 4 in. x No. 4 gauge to ⅛ in. inc........base, 3.0¢
1 and 1⅛ in. x No. 1 gauge to 4 gauge inc...extra, 0.2¢
1 to 3 in. x No. 5 gauge to 7 gauge inc........extra, 0.5¢
¾ to 3 in. x No. 8 gauge to 10 gauge inc.....extra, 1.0¢
¾ to 3 in. x No. 11 gauge to 16 gauge inc....extra, 2.0¢
¾ to 3 in. x No. 17 gauge to 20 gauge inc....extra, 3.5¢
⅜ to ⅝ in. x No. 10 gauge to 16 gauge inc....extra, 4.0¢
⅜ to ⅝ in. x No. 17 gauge to 20 gauge inc....extra, 5.0¢
⅜ to ⅝ in. x No. 21 gauge to 24 gauge inc....extra, 6.0¢
Bessemer and Open-Hearth cut to length, 24 inches and over, 0.1¢ per pound extra; and under, by special contract.

ROUND SPRING STEEL.
⅝ to 1½ inches..base, 3.0¢ | 5-16 inch........extra, 1.0¢
½ to 9-16 in.....extra, 0.2¢ | ¼ inch........extra, 1.5¢
⅜ to 7-16 in.....extra, 0.5¢

CUTLERY STEEL.
14 gauge thick and heavier........base, 3.2¢
15, 16 and 17 gauge........extra, ½¢
18 and 19 gauge........extra, ½¢
Rounds, ⅜ diameter and heavier........base, 3.3¢
Rounds, smaller sizes, extras same as Machinery.
Double bevel, 14 gauge and heavier........4.2¢
Double bevel, thinner than 14 gauge........extra, 1¢
Fork Steel, Open-Hearth or Bessemer........3.2¢
Rake Steel, Open-Hearth or Bessemer........3.5¢
Hoe Steel, Open-Hearth or Bessemer........3¢
Screw-Driver Steel, Open-Hearth or Bess,....℔ ℔ 4.2¢
Auger Bit Steel, Open-Hearth or Bessemer........3.5¢
Plow Slabs, Open-Hearth or Bessemer........2.5¢
Ovals and Half Ovals, Half Rounds and Special Shapes subject to special agreement, but at prices not less than Rounds of same weight ℔ foot.
No freight allowance shall be made on less than 500 pounds of Steel in one shipment.

MISCELLANEOUS.
Axle Billets........2 ¢ | Thrasher Steel........2½¢
Scythe Back Steel.....3 ¢ | Thrasher Teeth........3½¢
Grain Drill Bars........2½¢ | Rolled Ham'r Billets .2½¢
Grain Drill Points.....3½¢
Cutter Shoe, cut to lengths and tapered........3¢
Rolling Coulter Blanks, cut and punched........6¢
*Terms.*—Four months: 3 per cent. discount for cash if remitted within 30 days.

**Plate Steel.**
Tank Steel ¼ inch thick and heavier........base, 3.0¢
Tank Steel 3-16 inch thick and heavier.....extra, 0.3¢
Tank Steel 8 gauge and 9 gauge thick......extra, 0.5¢
Tank Steel 10 gauge to 12 gauge thick ....extra, 0.7¢
Shell Steel, ¼ inch thick and heavier, 50,000 to 60,000 pounds tensile strength........base, 3.25¢
Shell Steel, 3-16 inch thick, 50,000 to 60,000 pounds tensile strength........extra, 0.3¢
Shell Steel, 8 gauge and 9 gauge thick, 50,000 to 60,000 pounds tensile strength........extra, 0.5¢
Shell Steel, 10 gauge to 12 gauge thick, 50,000 to 60,000 pounds tensile strength........extra, 0.7¢
Shell Steel Plates, 90 inches to 100 inches wide, extra on each thickness, ¼¢
Shell Steel Plates, 100 inches to 105 inches wide, extra on each thickness, ½¢
Shell Steel Heads, 95 inches diameter to 105 inches diameter........extra on each thickness, ½¢
Shell Steel Heads, 105 inches diameter to 108 inches diameter........extra on each thickness, 1.0¢
Flange Steel, ¼ inch thick and heavier, 50,000 to 60,000 pounds tensile strength........base, 3.5¢
Flange Steel, 3-16 inch thick, 50,000 to 60,000 pounds tensile strength........extra, 0.3¢
Flange Steel, 8 gauge and 9 gauge thick, 50,000 to 60,000 pounds tensile strength........extra, 0.5¢
Flange Seeel, 10 gauge to 12 gauge thick, 50,000 to 60,000 pounds tensile strength........extra, 0.7¢
Flange Steel Plates, 90 inches to 100 inches wide, extra on each thickness, ¼¢
Flange Steel Plates, 100 inches to 105 inches wide, extra on each thickness, ½¢
Flange Steel Heads, 95 inches diameter to 105 inches diameter........extra on each thickness, ½¢
Flange Steel Heads, 105 inches diameter to 108 inches diameter........extra on each thickness, 1¢
Best Boiler Steel, ¼ inch thick and heavier, 50,000 to 70,000 pounds tensile strength........base, 4¢
Best Boiler Steel, 3-16 inch thick, 50,000 to 70,000 pounds tensile strength........extra, 0.3¢
Best Boiler Steel, 8 gauge and 9 gauge thick, 50,000 to 70,000 pounds tensile strength........extra, 0.5¢
Best Boiler Steel, 10 gauge to 12 gauge thick, 50,000 to 70,000 pounds tensile strengh........extra, 0.7¢
Best Boiler Steel Plates, 90 inches to 100 inches wide, extra on each thickness, ¼¢
Best Boiler Steel Plates, 100 inches to 105 inches wide........extra on each thickness, ½¢
Best Boiler Steel Heads, 95 inches diameter to 105 inches diameter........extra on each thickness, ½
Best Boiler Steel Heads, 105 inches diameter to 108 inches diameter........extra on each thickness, 1¢
Best Locomotive Fire-Box Steel........4.5¢

Heads, when not in complete Boiler sets, to be ⅛¢ per pound extra on each above grade, thickness and size. No Steel to be sold as Marine Boiler Steel except Best Boiler grade. Tank Steel, not stamped, ¼¢ per pound less than Shell Steel, subject to same classification.

**Miscellaneous Cast Steel.**
Auger and Auger Bit....8¢ | Roller........5½¢
Axle Steel for carriages and wagons........3¢ | Spindle, subject to Machin'y classification.5½¢
Frog Points & Plates.5½¢ | Trap Spring Steel........6¢
Frog Side Bars........5¢ | Forged Crank Pins and Lathe Spindles......7½¢
Pick, plain (hammered).5¢ | Piston Rods, plain......4¢
Pick and Mattock, beveled (rolled)........3¢ | Piston Rods, forged to shapes........7½¢
Skate Steel........4½¢ | Slide Bars, plain........5¢
Pike and Cant Hook....7¢ | Do., forged to shapes...7½
Coal & Granite Wedge..7¢

FILE CAST STEEL.
Square, Round, Half Rnd and Flat Bastard, 8 in. and over........ | Mill Saw, 8-in. and over.5¢
 | Taper, 3½-in. and over..6¢
 | Horse and Shoe Rasp....5¢

SPRING CAST STEEL.
Spiral, Taper, cut to lengths........5½¢
Solid Safe Cast Steel........4¢
Three and Five Ply Cast Steel........5¢

AGRICULTURAL IMPLEMENT CAST STEEL.
Fork & Rake, Crucible..4¢ | Corn Stalk Cutter, bev..4¢
Horse Rake Steel, cut to lengths, Crucible.....5¢ | beveled Hoe and Shovel Steel in Bars........4½¢
Hoe, Crucible........5¢ | Cruc. Plow St'l in Slabs.4¢

**Rolls and Castings.**
Per lb.
Furnace and Floor Plates........2¢
Sand Rolls over 12 inches diameter........2½¢
Sand Rolls 12 inches diameter and under........3 ¢
Roll Pinions over 12 inches diameter........2½¢
Roll Pinions 12 inches diameter and under........3 ¢
V-Tooth Pinions additional........½¢
Housen and Rolling Mill Castings not otherwise specified........2½¢
Spindles and Coupling Boxes........2¾¢
Squeezer Castings........2½¢
Squeezer Pinions and Wheels........2¾¢
Guide Plates........2½¢
Spur and Bevel Wheels, large........3¼¢
Spur and Bevel Wheels, small........3¾ to 4½¢
Pulleys, up to 30 inches........4 ¢
Pulleys, over 30 inches........3½¢
Engine Castings, light........4½¢
Engine Castings, heavy........3¾¢

**White and Red Lead.**
Strictly Pure White Lead in Oil, in Kegs. In lots of 500 ℔ and upward, 7¢ ℔ ℔; in lots less than 500 ℔, 7½¢ ℔ ℔ net; in 25-℔ cans, packed in 100-℔ cases, ½¢, and 12½-℔ cans, 1¢, over keg price; in 1 to 5 ℔ cans, assorted, in 100-℔ cases, 2½¢ over keg price.
Strictly Pure Dry White Lead in kegs, ℔ ℔........7 ¢
Strictly Pure Red *extra bright and fine*, in kegs...6 ¢
Strictly Pure Litharge, *powdered, ext. fine*, in kegs..6 ¢
Orange Mineral, *True*, in barrels, net 6 days and not subject either to rebate or freight equalization........8½¢
Orange Mineral, *True*, in 100-℔ kegs, net 60 days and not subject either to rebate or freight equalization........8½
Terms: Note or acceptance at 60 days; or less 2½ % for cash if paid within 15 days from date of invoice on lots of 500 ℔ and over.
Freight equalized with all points where White Lead is made.

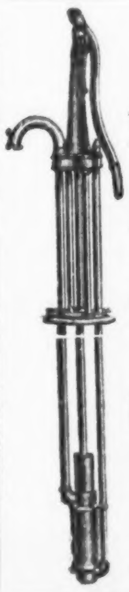
**Window Glass.**
*Discount*, 75 % *Single Strength*; 75&10 % *Double* Price current ℔ box of 50 feet.

Single Strength.

| United Inches | Sizes. | AA. | A. | B. | C. |
|---|---|---|---|---|---|
| 25 | 6 x 8 to 10 x 15........ | $8.75 | $8.00 | $7.50 | $7.00 |
| 40 | 11 x 14 to 15 x 24........ | 10.00 | 9.25 | 8.75 | 8.00 |
| 50 | 16 x 24 to 20 x 28........ | 12.50 | 11.50 | 10.25 | 9.00 |
| 54 | 15 x 34 to 24 x 30........ | 13.25 | 12.00 | 10.75 | 9.50 |
| 60 | 26 x 28 to 24 x 36........ | 14.50 | 13.00 | 11.50 | 10.25 |
| 70 | 26 x 36 to 26 x 44........ | 15.00 | 13.50 | 12.25 | 11.00 |
| 80 | 26 x 46 to 30 x 50........ | 16.75 | 15.25 | 13.75 | 11.75 |
| 84 | 30 x 52 to 30 x 54........ | 17.50 | 16.00 | 14.25 | .... |
| 90 | 30 x 56 to 34 x 56........ | 19.25 | 17.50 | 15.75 | .... |
| 94 | 34 x 58 to 34 x 60........ | 20.75 | 18.75 | 16.75 | .... |
| 100 | 36 x 60 to 40 x 60........ | 22.25 | 20.75 | 18.50 | .... |
| | Double Strength. | | | | |
| 25 | 6 x 8 to 10 x 15........ | 13.00 | 12.00 | 11.00 | 10.00 |
| 35 | 11 x 14 to 15 x 24........ | 15.50 | 14.00 | 13.00 | 12.00 |
| 48 | 16 x 24 to 20 x 28........ | 19.50 | 17.75 | 16.25 | .. |
| 54 | 15 x 34 to 24 x 30........ | 20.75 | 19.00 | 17.00 | .... |
| 60 | 26 x 28 to 24 x 36........ | 22.00 | 20.25 | 18.25 | .... |
| 70 | 26 x 36 to 26 x 44........ | 23.00 | 21.25 | 19.00 | .... |
| 80 | 26 x 46 to 30 x 50........ | 25.00 | 23.00 | 20.50 | ... |
| 84 | 30 x 52 to 30 x 54........ | 26.50 | 24.50 | 22.00 | .... |
| 90 | 30 x 56 to 34 x 56........ | 28.50 | 26.25 | 23.50 | .. |
| 94 | 35 x 58 to 34 x 60........ | 31.50 | 29.00 | 26.00 | .... |
| 100 | 36 x 60 to 40 x 60........ | 34.50 | 31.75 | 28.50 | ... |

Sizes above — $10 ℔ box extra for every 5 inches. An additional 10 per cent. will be charged for all glass more than 40 inches wide. All sizes above 52 inches in length, and not making more than 81 united inches, will be charged in the 84 united inches bracket.

**Hubbard, & Co.'s Goods.**
Axes, Single Bit, Lippincott........per doz., $7.50
Axes, Single Bit, James & Co........per doz., 6.50
Axes, Double Bit, Lippincott........per doz., $12.50
Axes, Double Bit, James & Co........per doz., 10.00
Drain Tools, list........dis 20&7½&5 %
Hoes, Planters' and Scovill Pattern........dis 50 %
Hoes, Handled, Square Eye, German........dis 50 %
Handles, Cross Cut........per doz., $2.25
Handles, Shovel, Bent, Bored, Riveted..per doz., 2.00
Saws, Circular........dis 50 %
Saws, Long........dis 45 %
Saws, Cross-Cut, H. B. & Co., Champion, foot net..$0.27
Saws, Cross-Cut, Lippincott, Champion, foot net..$0.25
Shovels, list........dis 20&7½&5 %
Spades, list........dis 20&7½&5 %
Scoops, list........dis 20&7½&5 %

NEW CHAMPION FORCE PUMP
HAS
*Vacuum Chamber and Air Chamber,*

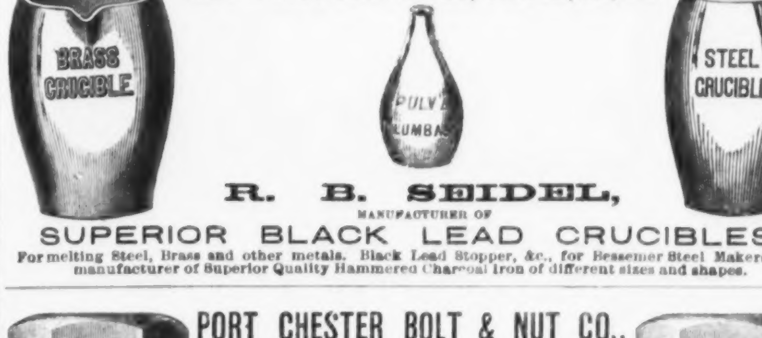
Producing a continuous flow of water, both in suction and discharge. Works smoother and easier than any other force pump in the market. Has Seamless Drawn Brass Cylinders and no stuffing boxes. Never freezes in winter, and is not liable to get out of order. With Hose Attachment it is valuable as a fire protection, and for sprinkling lawns, gardens, &c. It is specially adapted for all kinds of wells—dug, drilled or driven—and for pumping water long distances from springs.

CLARK'S IMPROVED
Ratchet Stocks, Dies & Pipe Vises
FOR USE BY
Plumbers, Gas Fitters and Pump Dealers.

With the Ratchet Stock pipe can be threaded in a corner, down in wells, or in positions that would be inaccessible with other tools.
Send for Circulars and Price Lists to

CLARK BROTHERS, Mfrs., Belmont, N. Y., U. S. A.

PHILADELPHIA BLACK LEAD CRUCIBLE WORKS,
1324 to 1334 Callowhill St., Philadelphia, Pa.

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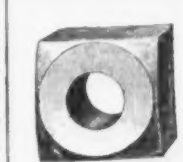
MANUFACTURER OF
SUPERIOR BLACK LEAD CRUCIBLES.
For melting Steel, Brass and other metals. Black Lead Stopper, &c., for Bessemer Steel Makers. Also manufacturer of Superior Quality Hammered Charcoal Iron of different sizes and shapes.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MANUFACTURERS OF
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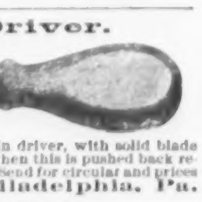

Common Sense Screw Driver.

Silver Medal awarded at Novelty Exhibition, Philadelphia, 1885. This is a plain driver, with solid blade and handle, has a sliding attachment that holds the screw firm to the driver, and when this is pushed back releases the screw to drive home. Strong and well made of best steel. Sells at sight. Send for circular and prices to the patentee, G. F. KOLB, 732 Sansom St., Philadelphia, Pa.

Rutherford's Metallic Paint.
GUARANTEED TO BE THE BEST PAINT MADE FOR TIN, IRON AND WOOD.
RUTHERFORD & BARCLAY, Miners and Manufacturers,
*Main Office, 305 CHESTNUT ST., PHILADELPHIA, PA.*
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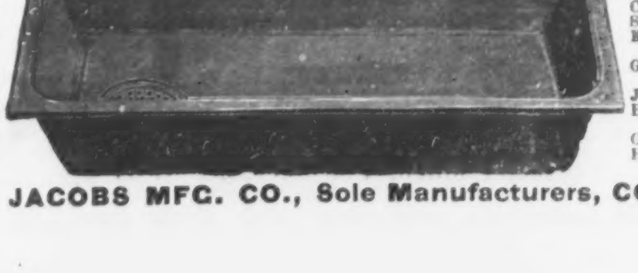
THE COLUMBUS WROUGHT STEEL SINK,
FOR BUTLER'S PANTRY AND KITCHEN. (Pat. April 12, 1881.)

Entirely new, being stamped from one plate of steel and superior to cast-iron sinks in every particular, being *lighter*, *stronger* and *more durable*.

These sinks, being made of *wrought steel*, will not break from heat, cold, or *any cause whatever*.

We furnish these sinks painted or galvanized, as desired, at prices—freedom from breakage considered—less than for sinks made from cast iron.



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McINTOSH, GOOD & HUNTINGTON, Cleveland, Ohio.
C. A. BLESSING, Philadelphia, Pa.
SIDNEY SHEPARD & CO., Buffalo, N. Y.
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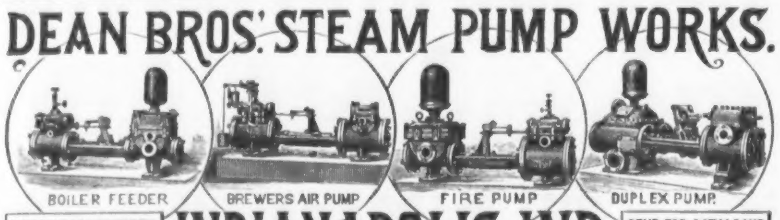
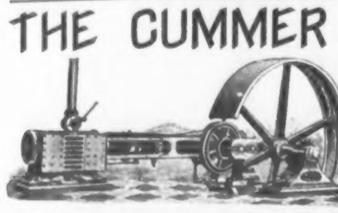
HOLBROOK, MERRILL & STETSON, San Francisco, Cal.

THE KILBOURNE & JACOBS MFG. CO., Sole Manufacturers, COLUMBUS, OHIO.

DEAN BROS' STEAM PUMP WORKS.


PUMPING MACHINERY FOR ALL PURPOSES. INDIANAPOLIS. IND. SEND FOR CATALOGUE AND PRICES.

THE CUMMER AUTOMATIC ENGINE

IS UNEQUALLED IN
Ease of Operation, Effective Duty, Close Regulation, Quick Starting Up to Speed, Uniformity of Speed and Economy of Fuel.
IT IS THE BEST ENGINE MADE.
☞ Printed matter, cuts and information promptly furnished on application. Send for our Illustrated Catalogue.
THE PROSPECT MACHINE & ENGINE CO.,
Formerly THE CUMMER ENGINE CO., Cleveland Ohio.

Issues Policies of Insurance after a careful Inspection of the Boilers,
COVERING ALL LOSS OR DAMAGE TO
BOILERS, BUILDINGS and MACHINERY,
ALSO COVERING LOSS OF LIFE AND ACCIDENT TO PERSONS, ARISING FROM
STEAM BOILER EXPLOSIONS.
Full information concerning the plan of the Company's operations can be obtained at the
COMPANY'S OFFICE, HARTFORD, CONN.,
or at any agency.
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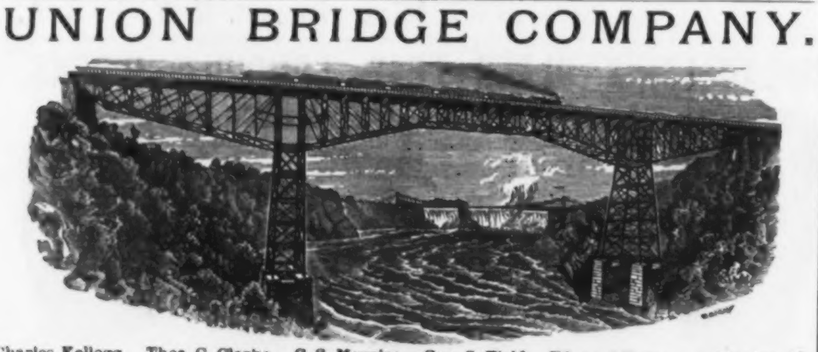
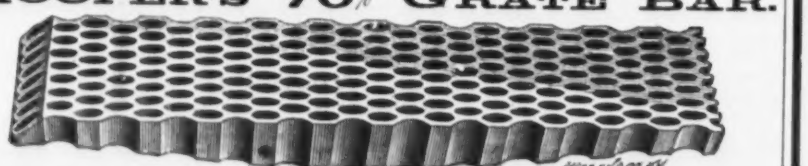
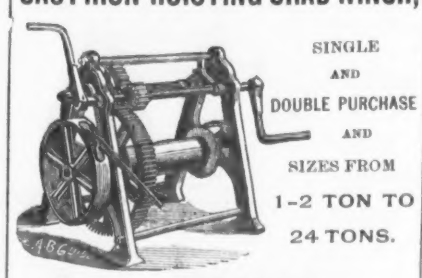
UNION BRIDGE COMPANY.

Charles Kellogg. Thos. C. Clarke. C. S. Maurice. Geo. S. Field. Edmund Hayes. C. Macdonald.
CIVIL ENGINEERS
And Constructors of Iron and Steel Bridges, Viaducts, Roofs, Elevated Railroads, Marine Piers, Etc.
Works: Athens, Pa. (Late Kellogg & Maurice.) Capacity, 14,000 tons.
Works: Buffalo, N. Y. (Late Central Bridge Works.) Capacity, 12,000 tons.
DESIGNS AND ESTIMATES WILL BE SENT ON APPLICATION TO
UNION BRIDGE COMPANY, 18 Broadway, New York.

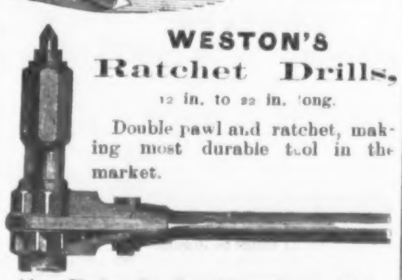
HOOPER'S 70% GRATE BAR.

Will not Warp.
Will not burn off at the ends.
Will give absolutely 70% air space.
Will give uniform combustion of fuel
Send for Circular and Price List to ALEXANDER TRAUD, EAST FERRY STREET IRON WORKS, NEWARK, N. J.

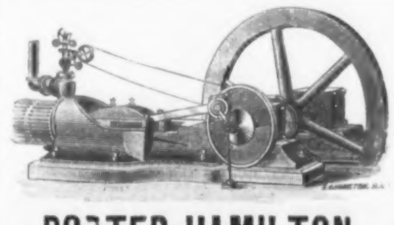
HUEBNER'S PATENT.

HUEBNER MANUFACTURING CO.,
MANUFACTURERS OF
Patent Door Screens,
ADJUSTABLE WINDOW SCREENS,
AND
Window Screen Brackets and Frames.
Factory, 236 to 238 E. Fort St.
Store, 205 Jefferson Ave.
DETROIT, MICH.
☞ Send for price list. Sold by Hardware Dealers everywhere.

A great improvement over the old style. Prevents slipping from head of the nail. Made of best quality Tool Steel. Carefully tempered. Appreciated and bought at sight by all mechanics. Prices on application. Made only by
The Edward Storm Spring Co., Limited, Poughkeepsie, N. Y.

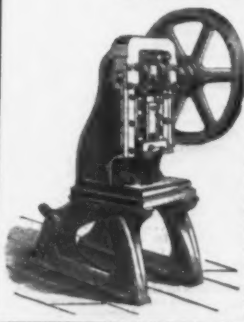
CASTIRON HOISTING CRAB WINCH,

SINGLE AND DOUBLE PURCHASE AND SIZES FROM 1-2 TON TO 24 TONS.

WESTON'S Ratchet Drills,
12 in. to 22 in. long.
Double pawl and ratchet, making most durable tool in the market.

Also Hydraulic Punching Bears, Rail Benders, Girder Testers, &c.
McCOY & SANDERS,
26 Warren Street, N. Y.


PORTER-HAMILTON,
ROLLING MILL ENGINE.
Hamilton Blowing Engine
FOR BLAST FURNACES.
MOST SATISFACTORY IN USE.
Send for Catalogue.
WILLIAM TOD & CO.,
YOUNGSTOWN, OHIO.

Upright Power Hammer.
This Hammer possesses advantages superior to any other in the market. It has neither cylinders, valves nor piston rods, consequently repairs are trifling. It takes up less space, less power to drive, strikes much harder and truer blows than hammers with double the weight of ram.

It can be worked to strike good alternate blows on a 4-inch and ¾-inch bar when a 100-pound hammer is used, and can be used on die work to a far greater advantage than any other hammer known. Manufactured by the
— R. A. BELDEN COMP'NY, Danbury, Conn

The Waterbury Farrel Foundry and Machine Co.,
MANUFACTURERS,
WATERBURY, CONN.

Rolling Mills, Rivet and Bolt Machines, Patent Power Presses, Wire Mills, Drop Presses, Chilled Rolls, Spinning Lathes, Trimming Lathes, Foot Presses, Dies & Punches, Gang Slitters, Grinding Machines, Cartridge Machinery, Screw Threading Machines. All kinds of Special Machinery for Sheet Metal and Wire.

Band Saws, Circular Saws, Planers

AND Other Machines for Pattern Shops.
BUFFERS, GRINDERS
AND OTHER
Metal Working Machines.
LATHES
For Wood and Metal.
CATALOGUES FREE.
P PRYIBIL 467 W. 40th St., NEW YORK.

MONCE'S
NOVELTY GLASS CUTTERS are the Standard.
DIAMONDIZED WHEEL
All Salable Styles made.
Remember that we are the Originator of the Glass Cutter Wheel—Patents not yet expired—INTERCHANGEABLE LOCK STENCILS.
S. G. Monce, Mfr., Bristol, Conn.


## BOSTON.

*Reported by Bigelow & Dowse.*

**Ammunition.**
*Cartridges—*
Rim Fire Cartridges........dis 60 %
Rim Fire Military Cartridges........dis 15 %
Cen. Fire Cartridges, Pistol and Rifle........dis 40 %
Cen. Fire Cartridges, Military and Sporting..dis 30 %
Blank Cartridges, except 22 and 32 cal., an additional 10 % over above discounts.
Blank Cartridges, 22 cal........$1.50
Blank Cartridges, 32 cal........3.00
Primed Shells and Bullets........dis 25 %
B. B. Caps, Round Ball........$1.60
B. B. Caps, Conical Ball, Swaged........1.75
*Primers—*
Berdan Primers, all sizes, and B. L. Caps (for Sturtevant Shells)........90¢
All other Primers, all sizes........$1.10
*Shells—*
Paper Shot Shells, 1st and 2d or S. G. qual..dis 25&5 %
Paper Shot Shells, Club, Rival, Climax....dis 40&5 %
Paper Shot Shells, Star Brand........dis 50&5 %
Brass Shot Shells, first quality........dis 60 %
Brass Shot Shells, Club, Rival and Climax....dis 65 %
*Wads—*
U. M. C. & W. R. A.—B. E., 11 up........$2.00 }
U. M. C. & W. R. A.—B. E., 9&10........2.30 }
U. M. C. & W. R. A.—B. E., 7&8........2.60 } dis 20 %
U. M. C. & W. R. A.—P. E., 11 up........3.10 }
U. M. C. & W. R. A.—P. E., 9&10........4.00 }
U. M. C. & W. R. A.—P. E., 7&8........4.90 }

**Anvil & Vise.**

| | 10 | 20 | 30 | 40 | |
|---|---|---|---|---|---|
| Cheney | $3.50 | 4.50 | 5.50 | 6.50 | dis 25 % |

Eagle, Fisher & Norris. No. 00, $1.75; 0, $2.25; 1, $2.75; 2, $3.25; 3, $4.00; 4, $4.50; 5, $5.25; 6, $6.00; 7, $6.50; 8, $7.25; 9, $8.25.
100 lb and over 10¢ lb........dis. 20 %

**Augers & Bitts.**
L'Hommedieu's Ship Auger........dis 15 %
Jenning's Bitts........dis 25 %
Cook's Bitts........dis 50&10 %
Griswold's Bitts........dis 60&10&5 %
Lewis's Patent Bitts........dis 40 %
Jennings' Pattern........dis 50&10&5 %

**Awning Fixtures.**
Dearborn's No. 1........₱ doz $10.50 }
Dearborn's No. 2........₱ doz 10.50 } dis 25 %
Dearborn's No. 3........₱ doz 13.50 }

**Axes.**
Blue Jackets........₱ doz $7.00
Francis Axe Co........₱ doz 7.00
Romer Bros........₱ doz 6.50
Romer Bros., Polished Steel........₱ doz 8.00

**Axle Grease.**
Belknap's tin boxes........₱ doz $2.00
Belknap's 5 lb pails........₱ doz 7.00
Belknap's 10 lb pails........₱ doz 12.00
Belknap's 50 lb cans........₱ lb .10

**Ax Handles.**
Oak Extra, 31 in., No. A........₱ doz $2.50
Oak Extra, 34 in., No. A........₱ doz 2.50
Oak Extra, 31 in., No. B........₱ doz 2.00
Oak Extra, 34 in., No. B........₱ doz 2.00
Oak Extra, 31 or 34 in., No. C........₱ doz 1.40

**Balances.**—Chatillon's........dis 40&10 %

**Barn Door Rail.**
Cast Angle (for Anti-Friction Hangers)........₱ ft., 2¢
Cast Half Round........₱ ft., ⅜, 2¼¢; ½, 3¢
Wrought Round........₱ ft., ⅜, 2½¢; ⅝, 3¢; ¾, 4¢

**Bird Cages.**
Hendry's Japanned........dis 40&10 %
Hendry's Brass........dis 33⅓&10 %

**Blind Fasts.**
No. 6 Fasts........₱ C sets 6.00
Shedd's........₱ C sets 6.00

**Blind Hinges.**—Mall. Hook, 3 holes..₱ C sets 7.00

**Blocks.**—Tackle........dis 50 %

**Bolts.**
*Carriage.*
Com. list June 10, 1884........dis 75 %
Genuine Eagle, list October, 1884........dis 75 %
*Tire.*
Common, list February 28, 1883........dis 65&10 %

**Borax.**—Refined........₱ lb 10¢

**Boring Machines.**
Eagle Upright, each........$5.50 list } dis 50
Eagle Angle, each........6.75 list } & 10 %

**Braces.**
Barber's........dis 50 %
Spofford's........dis 50&10 %

**Brackets.**
Rick Bros. Bronzed Shelf........dis 50&10 %
Rick Bros. Store Shelf........dis 40&10 %

**Bright Wire Goods.**
Regular list........dis 80 %

**Butts.**—Union Fast Joint........dis 60&10 %
Union Loose Joint........dis 70&10 %
Union Japanned Acorn........dis 70&10 %
Union Silvered Acorn........dis 70&10 %
Union Boston Finish........dis 80 %
Union Spiral Spring........dis 40 %
Wrought Brass........dis 75&10 %

**Carriage Bolts.**—Eagle Norway........dis 75 %
Common, new list........dis 75 %

**Cards.**
Watson's make Horse & Curry....dis 10 % }
Watson's Cotton........dis 10 % } Rev. List, Aug., 1883.
Watson's Wool........dis 10 % }

**Carpet Sweepers.**
Welcome Rubber Roll........₱ doz $19.00
Welcome Cog Wheel........₱ doz 17.00

**Casters.**—Bed and Table........dis 50&10 %

**Chain.**
Coil 3-16........₱ lb 8¢
Coil ¼........₱ lb 6¢
Coil 5-16........₱ lb 5¢
Coil ⅜........₱ lb 5¢
Coil 7-16........₱ lb 4½¢
Coil ½........₱ lb 4¼¢

**Chalk.**—White, Carpenter's........₱ gross 55¢
Red, Carpenter's........₱ gross 75¢
Blue, Carpenter's........₱ gross 90¢
Crayons........12¢

**Chisels.**—Peck, Stow & Wilcox........dis 70&10&10 %
Underhill, Framing........dis 40 %
Buck's Chisels........dis 30 %

**Coal Hods.**—Galv'd, New List........dis 60&10&10 %
Japanned, New List........dis 60&10&10 %

**Cocks, Brass.**
Racking........}
Globe........} dis 55&10 %
Plain Bibbs........}
Compression, Eastern Mfg. Co.:

| | | ¼ | ⅜ |
|---|---|---|---|
| To Screw | ₱ doz | $2.50 | 3.50 |
| To Solder | ₱ doz | 2.50 | 3.50 |

**Coffee Mills.**—New List........dis 45&10 %

**Copper Rivets**........dis 50&10 %

**Cordage.**
Manila, usual trade dis 1¢ ₱ lb........₱ lb 13¢
Sisal, usual trade dis 1¢ ₱ lb........₱ lb 11½¢

**Cow Ties**........dis 50&10 %
No. 30 3 ft. No. 6 Wire, with toggle........₱ doz $3.80
No. 35, 3 ft. No. 6 Wire, with snap........₱ doz 4.00
No. 40, 3½ ft. No. 6 Wire, with toggle........₱ doz 4.30
No. 45, 3½ ft. No. 6 Wire, with snap........₱ doz 4.50
No. 50, 4 ft. No. 4 Wire, with toggle........₱ doz 4.75
No. 55, 4 ft. No. 4 Wire, with snap........₱ doz 5.00
No. 60, 4½ ft. No. 3 Wire, with toggle........₱ doz 5.60
No. 65, 4½ ft. No. 3 Wire, with snap........₱ doz 5.80

**Crow Bars.**—Cast Steel........₱ lb 5¢

**Cutlery.**
Pocket American Shear Co.'s........net
Pocket Eastern Shear Co.'s........net
Butcher Knives, Wood's, Lap Bolster, Square Handle........dis 33⅓ %
Steak Knives........dis 33⅓ %
Lap Bolster, Oval Handle........dis 33⅓ %
Sticking........dis 33⅓ %
Skinning........dis 33⅓ %
Butcher, Common Round Handle, Wood's..dis 33⅓ %
Shoe Knives, Wood's........dis 30 %

**Dog Collars.**
Embossed Gilt, Pope & Stevens' list........}
Leather, Pope & Stevens' list........} dis 40 %
Brass, Pope & Stevens' list........}

**Door Springs.**—Torrey's Rod........₱ doz $1.50
Gem Coil, new list........dis 20 %
Crown........₱ doz $1.00
Warner's........₱ doz 1.50

**Drawing Knives.**
Kimball's Solid Steel........₱ inch 7⅛¢, dis 10 %
Eastern Mfg. Co.'s Solid Steel..₱ inch 7⅛¢, dis 20 %

**Drills.**—Morse Twist Drill Co.'s.
Bit Stock Drills........}
Wire Gauge Drills........} dis 50 %
Jobbers' and Letter Drills........}

**Drill Chucks.**
Morse's Beach Patent........each $8, dis 20 %
Morse's Adjustable........each $7, dis 20 %

**Emery.**

| | No. 4 to 46 gr. | No. 54 to 150 gr. | Flour, CF, F, FF. |
|---|---|---|---|
| Kegs, ₱ lb | 4 ¢ | 4 ¢ | 2½¢ |
| ½ kegs, ₱ lb | 4½¢ | 4½¢ | 3⅛¢ |
| ¼ kegs, ₱ lb | 4⅝¢ | 5 ¢ | 3¼¢ |
| 10 lb cans, ₱ lb | 7 ¢ | 7 ¢ | 5 ¢ |

**Enameled Ware.**
Enameled Kettles........dis 50 %
Enameled Sauce Pans........dis 25 %

**Files.**
American File Co........dis 60&10 %
Nicholson File Co........dis 60&10 %

**Fly Traps.**
Paragon........₱ doz $2.00
Balloon........₱ doz 1.75

**Forks.**
Withington & Cooley Mfg. Co.'s........dis 60&10 %

**Freezers.**
Packer's........dis 60 %
Gooche's........dis 60 %

**Grub Hoes.**
on City Tool Co.'s........dis 60 %

**Hammers.**
Maydole's........dis 25 %
C. Hammond's........dis 40 %

**Hangers.**
Common Hangers........dis 50&10 %
Common Rollers........dis 50&10 %
Faultless Hangers........dis 40 %
Victor Hangers........dis 50 %
American Parlor Door, $6 set........dis 20&10 %

**Hatchets.**—C. F. Dowse, new list........dis 40 %
Underhill........dis 40 %
Eastern Tool Co.'s........net

**Hay Knives.**—Lightning........$18.00, dis 20 %

**Hinges.**—Strap and T (new list)........dis 65 %
Providence Plate........₱ lb 5¢
Wrought Screw Hook........₱ lb 5¢

**Hoes.**—W. & C. Mfg. Co.'s........dis 60&10 %

**Hooks and Staples.**—Brewer's (new list)..dis 70 %

**Horse Nails.**

| | No. 6 | 7 | 8 | 9 | |
|---|---|---|---|---|---|
| Putnam Pointed | $0.24 | .22 | .21 | .20 | 5&7 % |

**Knobs**........dis 45 %

**Lanterns.**—Tubulars, No. 0........₱ doz $7.50

**Lawn Mowers.**
Continental........dis 50&5 %
Quaker City........dis 50&5 %
Philadelphia Keystone........dis 50&5 %

**Lead.**—Sheet........₱ lb 8¢
Pipe........₱ lb 7¢

**Locks.**—Norwalk........dis 45 %
Eagle Cabinet........dis 40 %
Eagle Trunk........dis 25 %
Mallory, Wheeler & Co........dis 66⅔ %

**Manure Forks.**—W. C. & Co........dis 60&10 %

**Mattocks.**
Long Cutter, $16.00 ₱ doz........}
Short Cutter, $15.50 ₱ doz........} dis 60 %
Pick Cutter, $16.00 ₱ doz........}

**Measuring Tapes.**—Eddy's........dis 20 %

**Meat Cutters.**
Enterprise........dis 30 %

| Nos. | 10 | 12 | 22 | 32 | 42 |
|---|---|---|---|---|---|
| Each | $3.00 | 2.50 | 4.00 | 6.00 | 10.00 |

**Nails.**........₱ keg $2.35
Wire Nails, list April 13, 1886....dis 50&5 @ 50&10 %
Wire Carpet Nails........dis 60 %

**Oilers.**—Zinc and Tin........dis 60&10 %
Brass and Copper........dis 50&10 %
Draper's Common, ₱ doz., $3.75; Patent, ₱ doz $4.50
Thompson's........₱ doz $3.00
Malleable Iron........dis 10 %

**Ox Bows.**—Extra finished and varnished....dis 15 %
1½ in., ₱ doz. pair...$7.00 | 2 in., ₱ doz. pair..$10.00
1⅞ in., ₱ doz. pair... 9.00 | 2¼ in., ₱ doz. pair.. 12.00

**Paper.**—Common Tarred Sheathing........₱ lb 1¾¢
Eagle Brand Tarred Sheathing........₱ lb 2 ¢
Common, Dry Sheathing........₱ lb 1¾¢
Eagle Brand Dry Sheathing........₱ lb 2½¢
Neponset Water Proof........₱ lb 3½¢

**Picks.**
I. C. T. W., Adze Eye, 6 to 7 lb $13.00........dis 60 %

**Planes.**
Auburn Tool Co., Bench........dis 35 %
Auburn Tool Co., Fancy........dis 35 %
Auburn Tool Co., English Iron........dis 25 %
N. Y. Tool Co., Bench........dis 40 %

**Plated Ware.**—Rogers & Bro........dis 50&10 %

**Pliers.**—Vom Cleff & Co.'s........net list
Button's Wire Pliers........dis 40 %

**Plumb & Levels.**—Stanley R. & L. Co..dis 70&10 %

**Potato Diggers.**
W. C. & Co., reduced list........dis 60&10 %

**Pulleys.**—Acme or Excelsior, 1¾ in........₱ doz 22¢
Acme or Excelsior, 2 in........₱ doz 24¢

**Pumps.**—Union Manufacturing Co.
Iron Cistern........dis 50 %
Iron Pitcher Spout........dis 60 %
Copper........dis 30 %

**Rivets.**—In 5 lb papers........dis 60 %
Burrs........dis 60 %
Copper........dis 60 %

**Razors.**
Genuine Swedish........₱ doz $13.50

**Rope.**—Manufacturers' list, February 6, 1886 (Dis 1¢ on Manila and Sisal)
Manila........½ inch and larger ₱ lb 13 ¢
Manila........⅜ inch ₱ lb 13½¢
Manila........¼ and 5-16 inch ₱ lb 14 ¢
Manila, Tarred Rope........₱ lb 12½¢
Manila, Hay Rope........₱ lb 13 ¢
Sisal........½ inch and larger ₱ lb 11½¢
Sisal........⅜ inch ₱ lb 12 ¢
Sisal........¼ and 5-16 inch ₱ lb 12½¢
Sisal, Hay Rope........₱ lb 11½¢
Sisal, Tarred Rope........₱ lb
Sisal, Single Ply Lath Yarn........₱ lb
Cotton Rope........₱ lb 15@18¢ net
Jute Rope........₱ lb 7¢

**Rules.**—Stanley, Boxwood........dis 75&10 %
Stanley, Ivory........dis 50&10 %

**Sad Irons.**—Common........₱ lb 3 ¢
Laundry........₱ lb 6½¢
Tailors' Geese........₱ lb 6 ¢
Enterprise "Potts"........dis 40 %

**Sandpaper.**—Baeder & Adamson........dis 20 %

**Sash Weights.**—Patent Eye........₱ lb 1¼¢

**Saws.**—Hand Saws, Disston's........dis 20 %
Cross-Cut Saws.
Disston's, Common Tooth........₱ foot 68¢, dis 45 %
Disston's Great American Tooth..₱ foot 68¢, dis 45 %
Atkins' Circular........dis 50 %
Atkins' Silver Steel Diamond X Cuts....₱ foot 75 ¢
Atkins' Concave Tooth Dexter X Cuts....₱ foot 55 ¢
Atkins' Special Steel Diamond X Cuts...₱ foot 32 ¢
Atkins' Champion and Electric Tooth X Cuts.
........₱ foot 30 ¢
Atkins' Hollow Back X Cuts........₱ foot 21 @ 22 ¢
Atkins' Shingle, Mulay, Drag, &c........dis. 45 %
M. B. & D., Hand Saws........dis 33⅓ %
Richardson Bros........dis 25 %

**Saw Blades.**—Disston........dis 20 %
Welch & Griffith, Extra........₱ doz $7.20
Welch & Griffith No. 2........₱ doz 6.00

**Scales.**—Fairbanks........dis 20 %

**Screen Window and Door Frames.**
Hart's Screen Frames, No. 1........₱ doz $1.75
Hart's Screen Frames, No. 2........₱ doz 2.25
Hart's Screen Doors, No. 10........₱ doz 7.50

**Screws.**
*Wood Screws* List February 15, 1886.
Flat-Head Iron........dis 75 %
Round-Head Iron........dis 70 %
Flat-Head Brass........dis 75 %
Round-Head Brass........dis 70 %
Flat-Head Bronze........
Round-Head Bronze........
*Machine—*
Flat-Head, Iron........dis 60 %
Round-Head Iron........dis 55 %

**Scythes.**
Blood's Clipper Scythes........₱ doz $6.50
Nolin's Clipper Scythes........₱ doz 7.00
Nolin's Solid Steel Scythes........₱ doz 9.00
Emerson Clipper Scythes........7.00
Emerson Solid Steel Scythes........9.00

**Shears.**—American Shear Co., new list........dis 70 %

**Shot.**—Le Roy........$1.60 bag.

**Shovels.**—O. Ames, new list........dis 20 %
O. Ames, other brands, new list........dis 20 %

**Sinks.**—Magee Patent........dis 30 %

**Snow Shovels**........$3.75

**Skates.**—Eastern Acme.
No. 5, Steel Runners........₱ pair $1.00
No. 7, Steel Runners, hardened........₱ pair 1.50
No. 10, Steel Runners, hardened, Nickel Plated........₱ pair 2.00

**Stocks and Dies.**—King's........dis 10&5 %

**Tacks.**—Eastern Mfg. Co.
American Iron Carpet Tacks, all kinds...dis 65&10 %
Steel Carpet Tacks, all kinds........Dis. 72, 2&10 %
Swedes Iron Carpet Tacks, all kinds.....dis 70&10 %
Swedes Iron Tacks........}
Swedes Iron Upholsterers' Tacks........}
Tinned Swedes Iron Tacks........} dis 55&10 %
Tinned Swedes Iron Upholsterers' Tacks }
American Iron Cut Tacks........}
Copper Tacks........dis. 55&10 %
Copper Finishing and Trunk Nails........dis. 55&10 %
Cigar Box Nails........dis. 50&10 %
Finishing Nails........dis 55&10 %
Hungarian Nails and Miners' Tacks........dis 55&10 %
Gimp and Lace Tacks........dis 65&10 %
Tinned Gimp and Lace Tacks........dis 65&10 %
Trunk and Clout Nails........}
Tinned Trunk and Clout Nails........} dis 55&10 %
Basket Nails........}
Chair Nails........dis 50&10 %
Common and Patent Brads........dis 55&10 %

**Transom Lifters.**
Wollensak's Patent Iron Bronzed........dis 50 %

**Traps.**—Game.
Newhouse........dis 35 %
Oneida Pattern........dis 60&10&10@70 %
Game, Blake's Patent........dis 40&10&5 %

**Vises.**—Simpson's Adjustable........dis 33⅓ %
Howard Vise Co........dis 33⅓ %
I. C. T. Co.'s Blacksmiths'........dis 50&10 %

**Weather Strips.**
Richmond Bottom Strip, Walnut........₱ doz $5.00
Richmond Bottom Strip, Imit. Walnut...₱ doz ....
Richmond Bottom for Double Doors........₱ doz 15.00
Packer's........₱ doz 4.50
Underwood's........₱ pair, plain $3.75, rubber 4.00

**Wire Cloth.**—"Clinton"........₱ sq. ft. 2 ¢

**Wire Fence.**
Buffalo Painted Barbed........₱ lb 4 ¢
Buffalo Galvanized Barbed........₱ lb 4½¢

**Wrenches.**—A. G. Coe's........dis 60 %
Girard Mfg. Co........dis 60&10 %
Girard Agl........dis 70&10 %
"Always Ready"........dis 25 %

**Wringers.**
Novelty for Common Tubs No. 2—10-in..₱ doz $34.00
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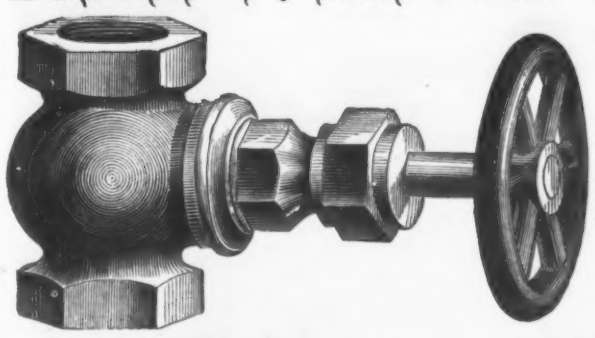

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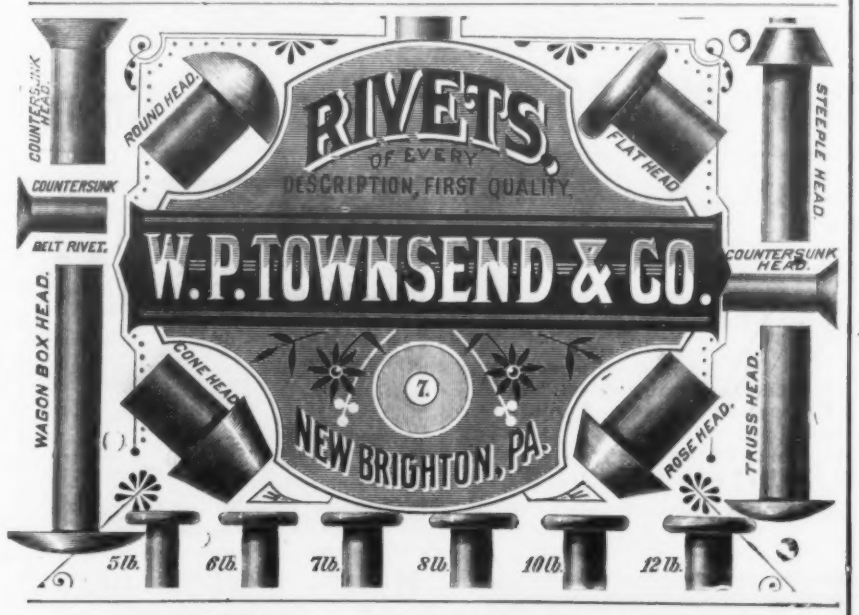


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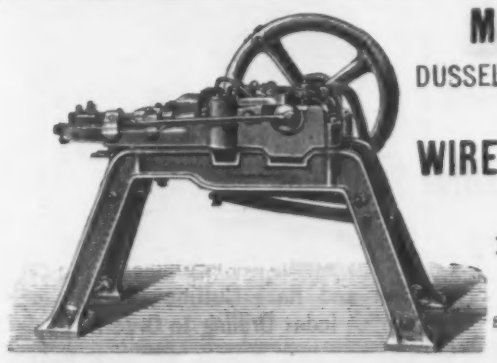

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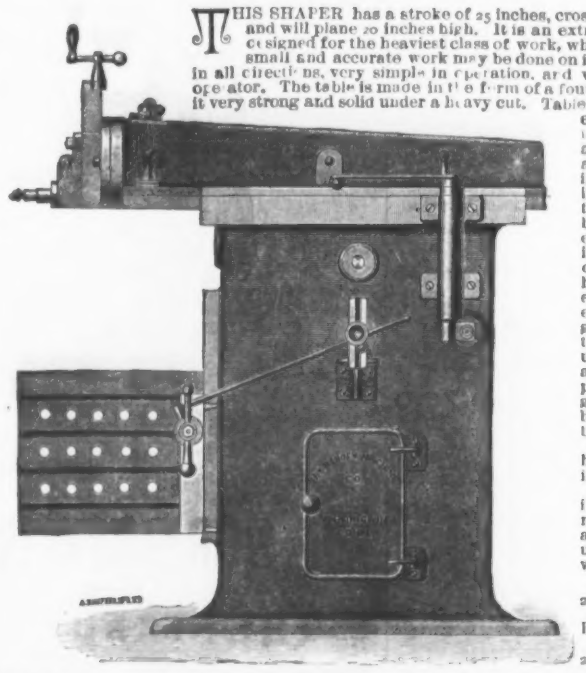

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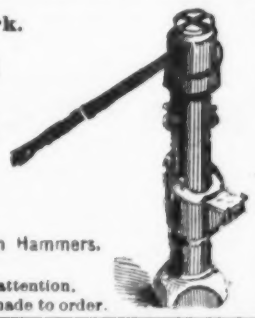

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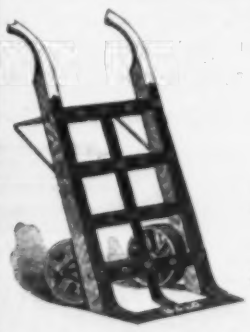

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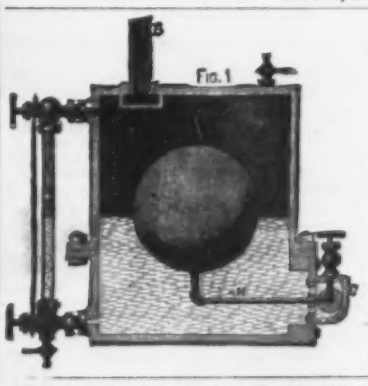


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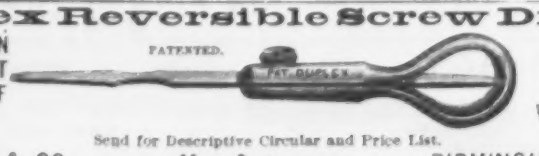


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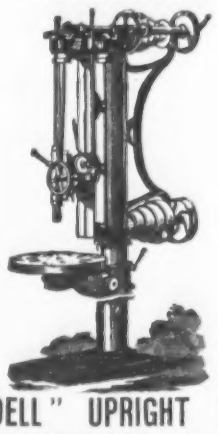

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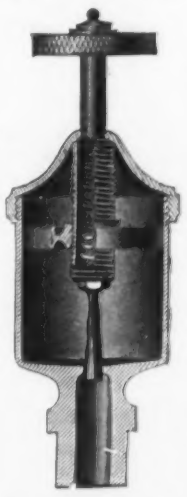

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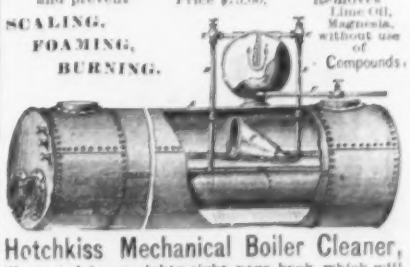

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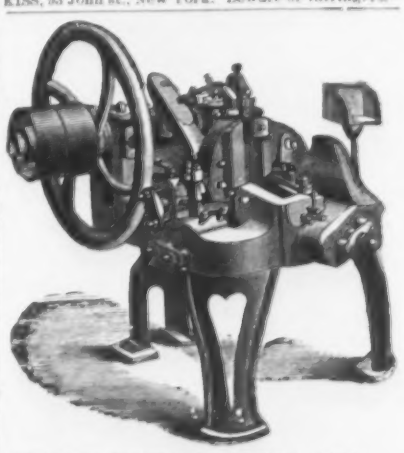

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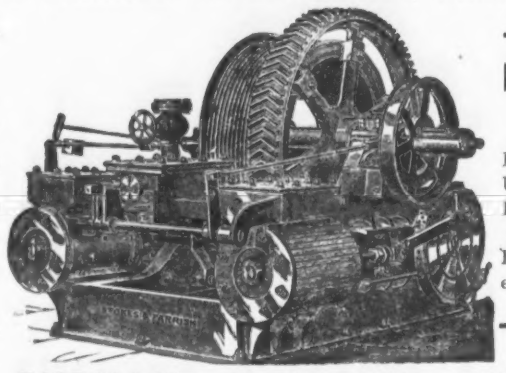

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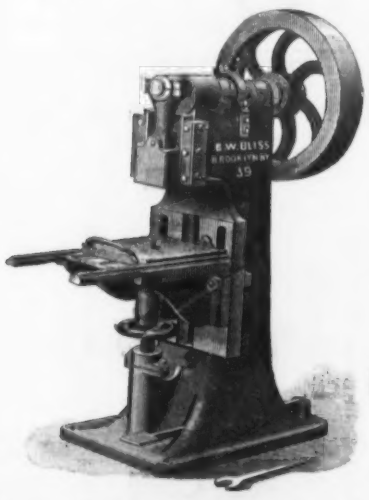

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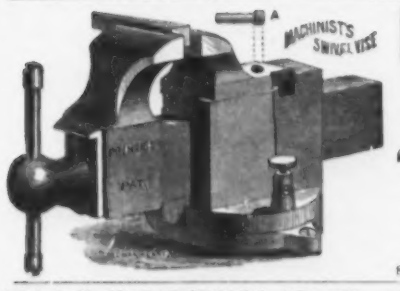

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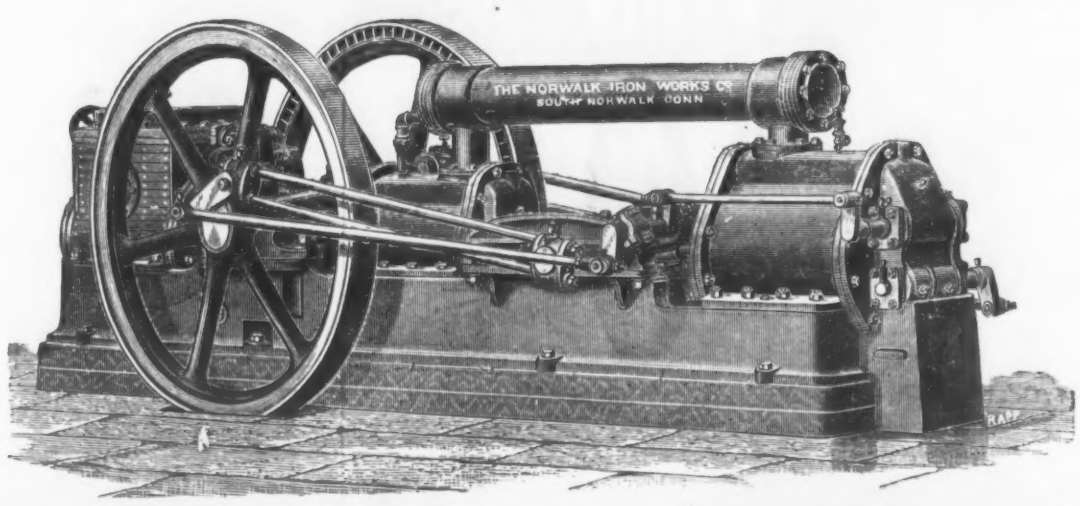


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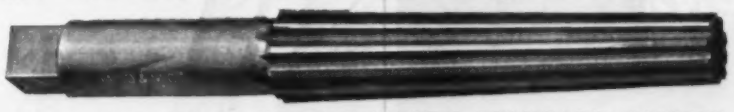

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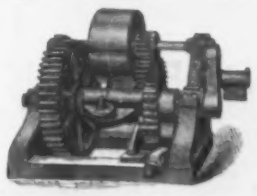

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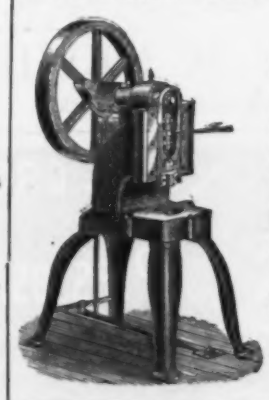

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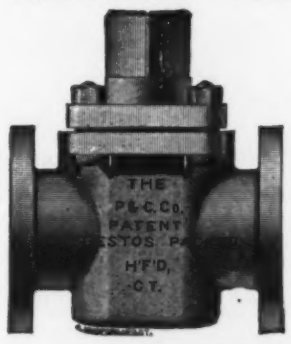

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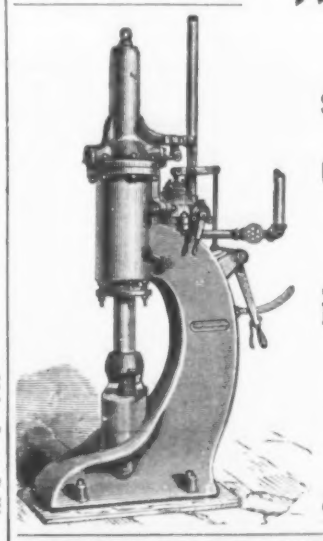

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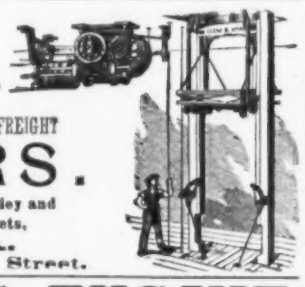

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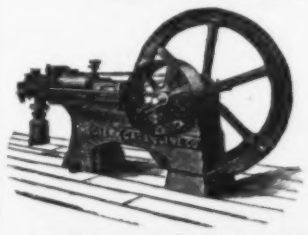

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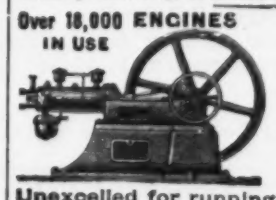

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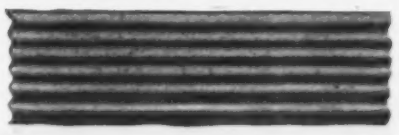

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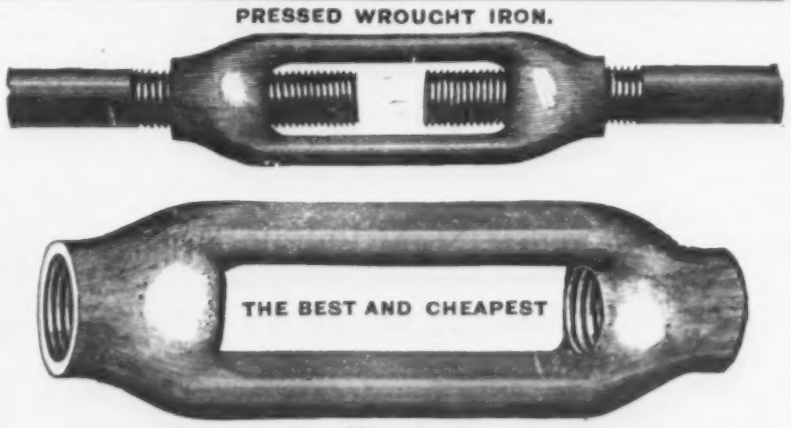


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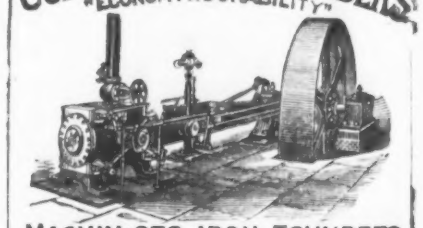

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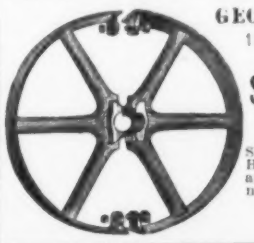

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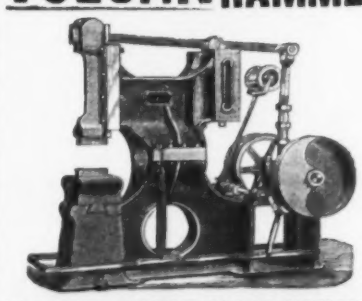

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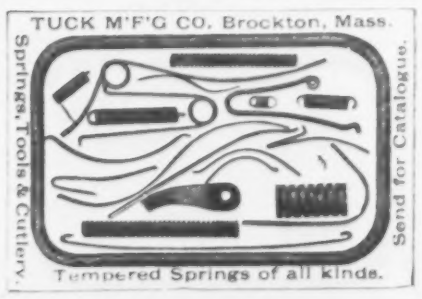

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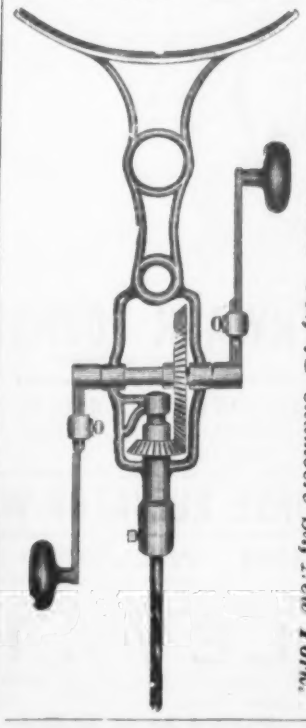

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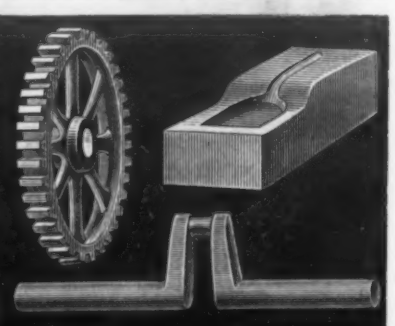

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